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ABSTRACT

The 1977-78 program plan is presented for the National Institute of Education (NIE) Education and Work Group, which sponsors research on the nature of the relationship between schooling and work and develops programs which aim at increasing the ability of youth and adults to choose, enter, and progress in careers without regard to the barriers imposed by sex or race on career aspirations. Background on the need for national research and development in career education, goals and conceptual framework for the NIE career education program (in progress since 1973), and sub-problems identified for addressing the goals are discussed in detail. Nine strategy packages are then presented for program. Each describes the problem, recent history, projected 1977 activities, relationship to earlier work, and references. Headings for the strategy packages are (1) career decisionmaking and measurement of career information, (2) career awareness and career choices, (3) restricted occupational socialization in young children, (4) counseling and information services, (5) expanding career exploration opportunities for junior high, senior high, and postsecondary students, (6) work skills required when mobility rather than occupational stability is typical, (7) coordinated planning for career preparations, (8) certification of occupational competencies after Griggs, and (9) adult continuing education. The remainder of the book (over half the total contents) consists of abstracts of over 100 projects completed or in progress. Each includes name and address of the principal researcher, project description, contract number, and funding level. Projects are indexed by principal researcher, topic, and name of affiliate, firm, or institution. A list of NIE publications on education and work is also included. (TA)

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Education and Work Group

National Institute of Education

PROGRAM PLAN FOR FISCAL YEARS 1977-1978

February, 1977

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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NIE PAPERS IN EDUCATION AND WORK

The National Institute of Education was created by Congress in 1972 to help solve problems in American education. One of the Institute's major program areas is education and work. As its name implies, the Education and Work Group sponsors research on the nature of the relationship between schooling and work. It also develops programs which aim at increasing the ability of youth and adults to choose, enter and progress in careers without regard to the barriers imposed by sex or race on career aspirations. In order to further professional understanding of these research and development activities, the Education and Work Group publishes a report series, NIE Papers in Education and Work. The following titles have been selected for publication; other titles are forthcoming:

1. The Development of Career Awareness in Young Children, by Aimee Dorr Leifer and Gerald S. Lesser of the Center for Research in Children's Television, Harvard Graduate School of Education.

2. Facilities Handbook for Career Education, by William B. Gill and Ann W. Luke of System Development Corporation.

3. Sex Discrimination in the Selection of School District Administrators: What Can Be Done?, by Doris M. Timpano of Career Women in Education and Louise W. Knight.

4. Entitlement Studies, by Henry Levin, Stanford University; John Honey, Syracuse University, and Norman Kurland, New York State Department of Education. (Available January, 1977.)

5. Education and Job Satisfaction: A Questionable Payoff, by Robert P. Quinn and Martha S. Baldi de Mandilovitch, Survey Research Center, The University of Michigan. (Available January, 1977.)

6. Paid Educational Leave, by Herbert Levine, Director of the Labor Education Center, Rutgers University. (Available January, 1977.)

7. Career Intern Program: Final Report: An Experiment in Career Education that Worked. (Available February, 1977.)

OTHER EDUCATION AND WORK GROUP PUBLICATIONS

1. Education and Work Group: Fiscal Year 1977-1978 Program Plan.

2. Education and Work Group: Select List of Products.

3. Answers to Questions Educators Ask About Career Education. (Available February, 1977.)

4. Issues of Sex Bias and Sex Fairness in Career Interest Measurement, edited by Esther E. Diamond.

5. Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories.

6. The Community Is the Teacher: Experience-Based Career Education.

7. Recurrent Education, edited by Selma J. Mushkin.

Single copies of all the above documents are available at no cost from the Education and Work Group, National Institute of Education, U.S. Department of Health, Education and Welfare, Washington, D.C. 20208. The postal cards at the back of this book may be used for ordering publications.

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Background

WHY SHOULD NIE BE CONCERNED ABOUT EDUCATION AND WORK?

Most Americans believe education and work are related. Gallup polls and a National Institute of Education sponsored survey show that Americans place preparation for work, economic success and better jobs above a variety of other reasons why people should go to school.[1] According to Newsweek,

> There's a new mood astir in the nation's schools. Partly because of a subtle shift in educational philosophy, students and educators alike find themselves asking one simple, pragmatic question: how does American education help a student find a job? "You live in a world where work is the name of the game," said the opening lecturer last month at Michigan State University's new course in career planning. "To make it in a job is to make it as a person." Five years ago, he probably would have been hooted off the stage. But this time, the students listened attentively and nodded in agreement.
> (November 25, 1974)

While public expectations regarding the contribution of education to success in life are high, evidence shows that young people leaving school often are not well prepared for the adult world. Increasing numbers of adults are unable to keep educational pace with their own changing interests and with economic shifts affecting their ability to earn a living.[2]

Many young people still in school apparently are not ready to make good educational and occupational decisions. An estimated 2.1 million high school juniors are making no decisions at all or decisions based on seemingly inaccurate information or inadequate experience.[3] Millions more are leaving school ill-prepared for either work or further education, judging from the number of general curriculum graduates who drop out from community colleges, proprietary schools and four year colleges. Many more are unemployed apparently due to lack of salable skills after high school graduation.[4] Still others remain underemployed after college graduation. Yet, an estimated 18 million adults seek continuing education to compensate for inadequacies during their high school preparation because they need retraining before job entry, because their skills are becoming obsolete, or because they seek better paying and more satisfying work.[5]

The consequences of failures in preparing youth and adults for career choice, entry and progression are believed to be costly and far-reaching. Among the problems cited by the proponents of career-related educational reform are (1) the stress-induced illnesses and reduced productivity associated with work dissatisfaction, (2) the apparent waste of schooling on many youth who are more interested in work than learning for learning's sake, (3) the use of postsecondary education as an aging vet or "cooling off" mechanism, and (4) the inequities due to education-related restrictions on occupational choice and preparation among women and minorities.[6]

Recent studies have clarified the education-related reasons for some of these problems. Three specific domains follow.

1. People make poor educational and occupational decisions because:

   (a) Aspirations, expectations, career commitment and consideration of career alternatives are unduly and very early limited by sex, ethnicity or social class.[7]

   for example: boys say they fail math because "I didn't try hard enough"; girls say they fail because "I'm not good in math."

   (b) They know little about working and lack information about the nature and requirements of different occupations, about occupational futures, and about the educational and experience requirements for career entry as well as career progression.[8]

   for example: 61% of a sample of 32,000 11th graders believe that persons never change jobs throughout their adult life; 43% believe that unemployment rates are lower for youth than adults; 46% believe women never work after getting married. The facts are that the average person changes jobs about five times throughout a worklife and the rate of occupational change is expected to be even higher in the future. Unemployment rates for youth are almost four times as great as those of adults, particularly among minority youth. Over 40% of all married women are currently in the labor force with projected increases in the future.

   (c) They don't really know about themselves and lack information about their own abilities, interest and preferences when these are tested against reality or even explored in occupational day dreams.

(d) They don't know how to reach a good decision and lack the decision-making skills to put information together into a realistic career plan or mesh educational decisions with occupational goals.[9]

for example: only 18% of a sample of 2,500 high school freshmen had realistic career and educational plans when self-reported interests and abilities were compared with the educational and occupational characteristics of their first career choices.

2. People are not prepared for employment or continued education because:

(a) Educational experiences that foster realistic career attitudes, behaviors and expectations and general and specific occupational skills are often not available.[10]

(b) Their skills, abilities and competencies are not certified in a way useful to continued education or to entry and progression in the ranges of occupations for which they may be qualified.[11] Employers are similarly handicapped in selection because hours-of-course-work completed or possession of a degree based on hour equivalency may be poorly related to competencies needed on-the-job.

(c) They have acquired specific vocational skills and abilities such as typing, welding or knowing how to file a brief but lack the work habits, practical transferrable skills, tools, and "learning how to learn" habits needed for career entry and progression in this occupationally mobile society.[12]

(d) Their skills, abilities and attitudes make them well-prepared for employment if reasonably appropriate work is available, but effective ways to bring together people who want to work and available employment are lacking.

3. People are not able to keep pace with their own changing interests as well as changes in the workplace because:

(a) They lack information about rapidly changing occupational and educational opportunities.[13]

(b) They do not have access to continued education for career development due to lack of money, time or the availability of appropriate programs.[14]

(c) They do not have accurate knowledge of abilities and skills acquired through family, community, recreational, or job experiences and how these affect career development.

(d) Acceptability of continued education for career development has not increased as rapidly as occupational changes and adults may doubt their rights and responsibilities for continued development.

ARE THESE PROBLEMS FOR EDUCATORS, ECONOMISTS OR EMPLOYERS?

Many problems related to education and work are probably beyond the influence of education to solve, however it is improved. Unemployment and wages are two instances. When economic conditions are good, job openings and wages usually increase; when economic conditions are poor, many people must accept work below their levels of competency or can find no work at all. Education per se can do little to influence economic conditions directly.[15] Other problems are related to the structure of the labor market; to policies and practices regarding recruiting, selection and promotions; the nature of the workplace itself; and technological changes affecting the demand for certain skills.[16] These, too, are probably but little influenced by educational change.

A persistent question is whether education can have a substantial, marginal or insignificant effect on the distribution and level of income and work satisfaction. Some educators, discouraged by studies suggesting that level and quality of education or educational achievement have relatively little impact on occupational mobility across ethnic or social class lines, urge that schools not be held accountable for increasing economic equality. Others believe that although schools should not have to bear the burden of all social changes, there are ways education could contribute more to individual and social benefits from work. Many feel the jury is still out on this question while waiting for educational research to help obtain the evidence.[17]

In the meantime, however, there is agreement that education can help people in the following ways:

— becoming more aware of the role of work in their lives and in our economy

— becoming better informed about the nature and requirements of different occupations and the education and experience needed to enter and progress in them

— acquiring self-knowledge in relation to various occupational futures

— avoiding socializing the next generation into narrow occupational stereotypes and to overcome self-imposed limitations on career choice due to socialization by others

-- improving their ability to make good career decisions and to develop career plans that will help them reach their occupational goals insofar as this is possible

-- developing the actual skills, abilities and attitudes needed to enter and progress in careers

-- acquiring certification in the skills and abilities obtained through formal and non-formal learning experiences

-- continuing their formal education as it is needed during a lifetime

-- acquiring information needed for career development throughout life.

Events, policies and programs are pushing both education and the economy to the limit. Legislation on the books or in process assigns career-related responsibility to educational institutions. For example, Florida now requires all high schools to place graduates in continuing education or work. High placement rates are being considered as requirements for Federal support of post-secondary occupational training. Equal Employment Opportunity legislation requires employers to offer education necessary for career advancement to entry-level employees. Court decisions increasingly ask employers to demonstrate the relevance of their selection and promotion criteria to success on the job. Other legal decisions are likely to affect educational certification procedures and related educational preparation. Some states are requiring evidence of occupational competencies and a salable skill as requirements for high school graduation. Enforcement of existing regulations is demanding more accurate labor market projections (and plans for coordinating Federally-supported occupational training with these projections) to reduce oversupply in some occupations, undersupply in others and to eliminate training in obsolete or unsalable skills.

Bringing the parts together:

Educators, economists and employers are being urged to work together on these problems. Career education cannot succeed without good vocational education--but career education includes more than vocational training. Some aspects of the problem, such as determining what skills are needed for job entry, seem to relate most closely to vocational education and manpower training.[18] The career development process, however, clearly begins long before a young person chooses to enroll in a vocational training program. Furthermore, some people believe that career education, if successful, could reduce the eventual need for manpower training.[19] Under current Federal legislation vocational education is limited to those occupations which require less than a baccalaureate degree. Labor market projections traditionally have been the responsibility of the Department of Labor. Increasingly, however, education analysts and representatives of business and labor conclude

that education, business, industry and labor will have to work together--particularly since career education is viewed as necessary for all youth and adults, not just those interested in particular fields.[20] The U. S. Chamber of Commerce writes,

> We ask school leaders to invite business, labor, professional and community leaders, including women's organizations and minority groups, to work with them in helping our young people to recognize and utilize relationships between education and work. Business, labor, professional and community leaders should also take the initiative.... Clearly, a more effective effort is necessary and such an effort is possible only through the collaborative leadership of the many organizations and individuals having a direct interest in our schools.

Many believe such a collaboration can help persons constantly intertwine what is learned in formal and non-formal education with what they need to survive in a world that requires most of its citizens to accomplish productive work.

WHAT IS ALREADY HAPPENING?

Some educational responses to these problems are underway:

1. Career education, the most encompassing reform movement related to education and work, focuses on the career development process from preschool through adulthood. Career education programs are spreading throughout the states (most have named a coordinator of career education) and in many school districts and community colleges. Under the leadership of Dr. Kenneth Hoyt of the U.S. Office of Education, a national consensus regarding the definition, goals and objectives of career education is developing.[21]

   However, (a) much remains to be known about how to meet the needs of particular target groups like women, minorities, handicapped and the gifted. Programs serving these persons are limited in quantity or coverage and are of uncertain quality. (b) Findings from research and development about career education in general have yet to be fully infused into programs. (c) Pre and in-service staff preparation is still circumscribed and there is a shortage of trained personnel at all levels. (d) The articulation of career education between secondary and adult education, between schools and the business, labor, industry community, and between the public and private sector is limited.[22]

2. Vocational/technical education is moving to identify new skilled and semi-skilled occupations for the future, to create more effective curricula, and to improve vocational counseling, guidance and placement.

   However, only 24% of all students now enroll in these training programs and the field is being challenged to provide up-to-date training in a wider range of occupations which more accurately reflect changing technology and labor markets in communities.[23]

3. Junior and community colleges are expanding as a uniquely American solution to providing occupational training beyond high school at less-than-the-baccalaureate-degree level, for offering a second chance at formal education to (a) those inadequately prepared by the high schools, (b) those who cannot attend school full-time due to family responsibilities and (c) persons limited by financial resources and geography.

   However, the completion rates at two year colleges are considered by some to be disturbingly low, leading to a concern for the apparent institutionalization of certain "cooling out" and "sorting" mechanisms which fall hardest on the educationally disadvantaged. Community colleges are being challenged to provide a wide enough range of occupational preparation, at high enough quality and low enough cost to serve their potentially very large constituencies.[24]

4. Institutions of higher education are becoming increasingly interested in non-traditional programs (such as external degrees, granting academic credit for work experience, life experience and education sponsored by business, industry and labor, and open entry/open exit enrollment). As one sign of concern for the occupational value of higher education, career development and placement offices are expanding rapidly on college and university campuses.

   However, the liberal arts and humanistic traditions and the apparent requirements of occupational preparation are uneasy bedfellows in higher education. While some programs such as the Empire State College of New York are reaching almost all the population within the state university system, many colleges and universities are only beginning (or thinking about beginning) to articulate what students learn on campus with what they might do after leaving college.

5. Employers and labor unions are expanding their continuing education programs and recurrent education through educational entitlements, liberalization of educational loan programs and

other approaches to worker education. Employers like Kimberly Clark and labor organizations such as AFL/CIO are spearheading new forms of worker education for leisure and career development.

However, many of the tuition refund programs are too narrowly job-related as the criterion of support. Cooperation between educational institutions at secondary and postsecondary levels with regard to course offerings and credentials is sporadic rather than systematic. The extent to which unions and larger employers such as the military develop their own postsecondary systems with little translation to other employment and educational opportunities must be examined. At present, employee participation is far greater among the educational "already haves" than among the "have nots" for reasons still unclear.

6. Professional organizations are becoming increasingly concerned with unemployment, underemployment and obsolescence among their members, and how these trends affect career guidance and preparation. Some organizations are beginning to certify occupational competencies required for entry level and higher positions (such as the Child Development Associate consortium) and are working with community colleges and four year institutions to develop competency-based programs.

However the problems of assessing competencies in a non-biased manner, of developing programs which are relevant but which avoid "teaching to the test," and updating the certification and training procedures are almost unexplored. In addition, the issue of which core skills are common to many occupations and which are unique competencies and how these could be certified across organizations and occupations has barely been raised.

The six areas cited above illustrate that the field of education and work is moving almost too quickly for any state-of-practice report. According to recent surveys, many changes are being energetically discussed and tried out on a pilot scale. Education at all levels is filled with innovative, potentially effective ways of improving career choice, preparation and development.[25] The following are examples only at the one level (secondary schools):

— In South Bend, Indiana, a conference phone was installed in a special room of the junior/senior high school. The phone was used to call community resource people and discuss career related ideas with students in their own classroom. The local service clubs developed a volunteer People-in-Careers directory and the local Chamber of Commerce funded telephone installation and monthly rental.

— A ninth grade course in social economics, in Riverton, Wyoming, involves students in setting up a company, deciding on a product to produce, selling stock, producing and marketing the product, and using advertising and sales techniques.

— Twelfth grade students in English in Lufkin, Texas, study the life of a member of the student's family, ideally a grandparent or someone of that age. Students not only learn note-taking, recording, interviewing skills, and story-telling, but they learn about the world of work and human values, the job changes their family member has made and the choices that had to be made to establish their life's work and life-style.

— In Raleigh, North Carolina, vestibule training for students in grades 11-12 matched student interests in developing skills with industries within the community area who indicated their areas of need. Specialists, including school staff, taught the courses at night (three nights a week for 3 hours, extending between six and eight weeks). Many industries hired students after this training, and in some instances, did the training themselves.

— In California, the Los Angeles County Alliance for Career Education and Industry Education Councils represent more than 100 separate groups in business, industry, government and labor unions. The Alliance sponsors work experience, observation and work study activities for students, as well as a Career Expo which provided career awareness information to 198,000 students in 1975. The Personnel Exchange Program allows teachers and counselors themselves to explore work environments, gaining their own hands-on experience of different work than teaching.

— At the Winston-Churchill High School in Potomac, Maryland, 87% of the graduating students begin college. Accordingly, the career education program at this school focuses on managerial and professional lines of work. Some 150 seniors spend from 10-20 hours a week in the offices of professional/technical/managerial employers in both private industry and government.

— In Cleveland, Ohio where an increasing proportion of students in five central schools were dropping out, eventually to continue the welfare cycle, a Job Development Program for non-college bound seniors offering a job preparation course, field trips and spring interviews with employers organized by the schools has succeeded in placing 90% of the participating students between June 1966 and June 1974, many of whom have used their earnings to continue their education part-time.

— In New Jersey, the Task Force on the Education of Women of the National Organization of Women compiled a roster of 200 New Jersey women employed in non-stereotypic careers. These women agreed to serve as resource persons for classroom visits and for special career days.

These opportunities are, however, still affecting relatively few students--mostly in demonstration or pilot programs that fall short of the comprehensive, systemic changes apparently needed. Expansion of opportunities to reach far larger numbers and in a comprehensive manner are among the priorities for those concerned with career development.[26] Furthermore, little is known about the quality of these programs and their immediate and longer term outcomes--beneficial and not-so-beneficial. The repeated calls for closer examination of career education concepts, for in-service and pre-service training, and for ways of assessing program effectiveness suggest that much more remains to be known--with perhaps even greater attention to program quality than to program quantity.

WHY IS FURTHER R&D NEEDED?

Since 1971 career education demonstration and development has been funded by the Federal government to clarify the concept, provide leadership and start-up money, and test innovative approaches beyond the scope of usual state and local support for education. About $45 million has been spent by the National Institute of Education on career education R&D in FY 1974, FY 1974 and FY 1975. About $40 million of this has been required to complete projects transferred from the Office of Education. Much of this investment has already paid off in terms of products disseminated, findings increasing our understanding of the relation between education and work, and programs adopted.[27]

Only about $5 million has been available between FY 1973 and FY 1976 for career education studies recommended by 1973 NIE-commissioned policy studies by Rand and Syracuse, by participants at NIE-sponsored conferences and workshops on career education research, by concerned organizations of researchers, practitioners and educators discussing career education R&D priorities, by national commission reports and major analytic articles on education and work, and by members of Congress. This FY 1977 planning document is the first opportunity for the NIE's Education and Work Program to support the highest priority activities among that extensive backlog of R&D needs identified through consultation and program review. In its FY 1973 and FY 1975 Forward Plans the Career Education Program (in a Federal first that drew attention in an Educational Researcher editorial) outlined the conceptual framework guiding its R&D program, described the research already underway, and discussed the priorities for further work. Over 3,000 copies of the FY 1973 report and 5,000 copies of the FY 1975 program plan were distributed. Response was generous and wide-ranging. This feedback is another important backdrop for the wide public participation that has gone into shaping the recommendations contained in this publication.[28]

There are several additional reasons why the Institute should support further research in career education:

1. New fields take longer. NIE is the only Federal agency with the responsibility and authorization to conduct R&D in career education. Yet only $5 million has been available to study issues arising since 1970 when the programs transferred to NIE from OE were originally funded. While Three years of research and development funding has contributed to the momentum of a new field, it has not been enough to understand both what works and why it works.

2. Theory building now reduces trial and error later. Experience shows that basic knowledge in career education is incomplete and weak. Without a better understanding of the extent of certain problems and the reasons for these, educators will have to fall back on trial and error programming, the kind that in the past has led to over-promising and under-delivering. As examples: What general cognitive skills have the greatest transferability among occupations? Is it better for a youngster to learn how to be flexible and adaptive? to type? or to have a high level of reading comprehension? What kind of information will most improve career decisions? Why is occupational knowledge so apparently linked to socio-economic background? Is it that children from low-income families have reading difficulty that affects their occupation information test peformance or is this due to occupational experiences that are part of the hidden curriculum of the middle class family?

3. Does it work? We can't tell without measures of student needs and program outcomes. Finding out what works and studies of the longer-term effects of career education programs are widely cited by educators as a major need.[29] Measurement of individual career development is in its infancy. There are few ways of assessing the unique competencies expected as a result of career education. Programming and certification are said to be hampered by inadequate conceptualization of such outcomes as "good work habits, values and attitudes" and of measures for assessing such career related outcomes as "better educational decisions." Evidence of the effects of career education and knowing whether the innovative ideas work should be in the hands of state legislatures and local school boards as they expand career education beyond the pilot stages.

4. That's good but this way may be better: designing and testing educational changes. While curriculum development already underway is regarded as essential for career education, other approaches to improving career choice and preparation which incorporate recent findings are needed. For example, research shows that parents are apparently the greatest single influence on occupational and educational decisions among youth yet almost

all programming has focused on teachers and counselors. Likewise, expansion of work experience programs for career exploration for all youth has been widely recommended but no one has yet shown how to do this on a large scale.

5. How do we get this into the hands of teachers? NIE products such as (1) an in-service training kit to reduce sex bias in the use of vocational interest inventories, (2) practitioner guides to effective career education materials and practices, and (3) the career decision-making program developed by Winefordner at the Appalachian Educational Laboratory are completed or almost completed. Short-term technical assistance is often required for many of these products--particularly programs which must be adapted to local conditions or which require changes in the way teachers, counselors and parents think about education and work or what they actually know about the workplace. For example, expansion of work exploration programs may be assisted substantially through dissemination of the Experience-Based Career Education (EBCE) program. Technical assistance in adapting EBCE to local circumstances is needed and the Institute is likely to be held accountable for reporting on its implementation, adaptations and on the effectiveness of the approach for the nation's 17,000 school districts when it leaves the present pilot test stage.

Goals & Conceptual Framework

The NIE Career Education Program has worked since 1973 to achieve two major goals:

1. Improve our understanding of the relationship between education and work.

   This includes better (1) definition of the problems, (2) better measurement of the outcomes (such as more informed career choices), (3) more accurate knowledge of to what extent educational reform can--and cannot--be expected to make a difference in workers' lives or in the work of society, and (4) better understanding of how, when and why education and work are related.

2. Increase the contribution education makes to individuals' abilities to choose, enter and progress in work that is beneficial to themselves and others.

   In earlier plans, NIE's initiatives in this area organized R&D around major reasons why individuals experienced difficulty in career choice, entry, and progression. These barriers were and still are: lack of information, inadequate curricula, lack of resources for continuing education, inadequate educational settings, and a lack of coordination among components of career education systems. Alternative settings--particularly work exploration programs, and improvement of guidance, counseling and placement to enhance career decision making--were selected as FY 1976 priorities.[30] Policy studies on career access to examine institutional and individual financial aid and of the economic and educational negotiability of alternative credentials were also authorized for FY 76.

   Analyses of recent research and practice suggest an organization for the Career Education Program more closely related to the career development process. This process is well described in a Michigan Career Development program guide:

   > An integrated approach to career education involves career development (self-awareness and self-exploration; career awareness and career exploration; decision making and planning; and placement) and career preparation (academic education, vocational education and technical education).[31]

Similar definitions are given by the U.S. Chamber of Commerce and by Assistant Commissioner Hoyt respectively:

> Career Education is the total effort of education and the community to help all individuals become familiar with the values of work-oriented society, to integrate such values into their personal value systems, and to implement those values in their lives in such a way that work becomes possible, meaningful and satisfying to each individual.[32]

> Career education includes career awareness, exploration, decision making, preparation, entry and progression.[33]

The strategies recommended for FY 1977 are based on the conceptualization of the career development process shown in Table 1. This conceptualization identifies four strands: (a) career awareness which includes occupational knowledge, occupational values and occupational self-concepts; (b) career exploration which involves indepth investigation of selected occupations and a correspondingly extensive knowledge of these occupations in relation to one's individual abilities and interests; (c) career preparation, which includes the three R's as well as skills such as flexibility and adaptivity, occupationally-unique skills, transferrable skills, and attitudes, values and behaviors necessary for finding, holding and progressing in activities of benefit to oneself and others; and (d) access from school to work, and from work to continued education for life long learning.

TABLE 1: CAREER DEVELOPMENT--CONCEPTS AND OUTCOMES

CONCEPT	INFLUENCED BY	OUTCOMES	LEADS TO
CAREER AWARENESS	• parents • friends • school • media	• general occupation information and knowledge • occupational self concept • work values and attitudes	• occupational preference • career exploration decisions • educational decisions • leisure and recreation interests
CAREER EXPLORATION	• informal work experiences • structured learning experiences in the community • significant others • media	• indepth information and knowledge of selected occupations in relation to one's own abilities, values and occupational self concept • knowledge of work place requirements and characteristics	• occupational and educational decisions related to career preparation • leisure and recreation interests
CAREER PREPARATION	• inherent abilities • formal schooling and training • informal learning experiences in family, community and on-the-job • leisure and recreational activities	• basic reading/ computational/listening skills • adaptivity, flexibility and higher order cognitive skills • work habits, values, attitudes and behaviors	• certification of occupational competence • career entry • career progression
CAREER ACCESS	• financial support • psychological support • placement and matching support	• continued development of competencies needed for horizontal and vertical mobility	• decreased frictional unemployment and underemployment • increased work satisfaction and productivity

The assumptions underlying this conceptualization are:

— "Career" means consecutive progressive achievement throughout one's life. By "occupation" is meant (1) the principal business of one's life which can include one's trade, craft, profession or other means of livelihood; (2) homemaking; or (3) community activities if these are the activities in which the individual spends a majority of time.

— Career development is a continuous process, the result of many education and occupation related decisions. Career decisions themselves are influenced by an awareness of careers, the explorations and unique experiences one has had, the level and type of career preparation, and the work opportunities and education available to the individual.

— Awareness, exploration and preparation as well as career-decision making are strands in career development. They are always present to a certain extent although activity may be greater in one strand than another at different times. The strands are not age-segregated.

— The three strands and the need for access from schooling to work (e.g., placement) and from work to schooling (e.g., continuing education) are developmentally inseparable. There is no educational or psychological basis at present for believing that an emphasis on one strand or the other by itself will have sufficient impact on the education-related career problems described earlier.

Based on this conceptual framework and a review of the state of knowledge and practice in each strand, four sub-problems have been identified. Strategies have then been proposed to increase understanding of the causes of these problems and to test educational approaches to solving them.

To a great extent, this plan can only be tentative. First, support for these activities is, of course, dependent on reviews by the Director of the National Institute of Education and by Educational Research, among others. Second, funds available to NIE in FY 77 will also determine which, if any, of the strategies can be pursued. In addition, opportunities for field initiated studies and unsolicited proposals should be increased, to provide greater response to important ideas not included in the forward plan.

On the other hand, the plan does not come "from Washington." It is rather the distillation of recommendations from practitioners, policy-makers and researchers. It represents, insofar as any one document responsive to ideas from many groups can, what the field seems to regard as among the highest priorities for R&D in education and work.

How NIE Will Address These Goals

OVERVIEW

Nine strategy packages provide more detail on each sub-problem, the rationale for selected strategies and the activities proposed. As a guide to understanding these packages, this section briefly summarizes the four sub-problems and strategies.

- Sub-problem 1: Many people lack information and career counseling services which could help them make better educational and occupational decisions.

  Strategies:

  1. Determine the causes of poor career decision-making and improve assessment of occupational information, career decision-making skills and quality of career decisions

  2. Learn how to reduce early channeling of girls and women into restricted occupational choices

  3. Find out how to expand and improve career counseling and career information services so policymakers can weigh the relative costs, feasibility and payoff of alternative approaches

- Sub-problem 2: Lack of opportunity for indepth investigation and exploration of what different kinds of work are like, an opportunity which would help improve career decisions--particularly high school plans, post-high school plans, and decisions regarding continuing education.

  Strategies:

  4. Discover how to expand and improve career exploration opportunities for junior high school students

  5. Learn how to expand and improve career exploration opportunities for senior high school students

  6. Develop ways to help post-secondary students explore different occupations before they make major educational decisions.

- Sub-problem 3: What should schools teach to prepare students for careers, avoiding the problems of overly narrow and of overly broad or irrelevant preparation? While there is considerable agreement that one purpose of education is to help prepare people for work, there is considerable disagreement on what kind of preparation is needed in a time of rapid occupational change.

  Strategies:

  7. Establish ways of conceptualizing occupational requirements and educational programs that will be most useful in identifying what schools should teach to prepare students for careers.

  8. Determine the feasibility, costs and effectiveness of different approaches to educational planning for career preparation.

  9. Improve what educational institutions can do to certify occupational competencies in ways that are both nondiscriminatory and relevant to occupational performance.

  10. Learn how schools can increase educational equity in career preparation of women.

- Sub-problem 4: Life-long access to education for career development is needed. How to finance such access or how individuals will use these financial plans is uncertain.

  Strategy:

  11. Determine for adults between 25 and 55 years of age what amount of assistance, kinds of eligibility requirements and other conditions for use of monetary support for continuing education will result in high levels of participation and completion, when financial assistance is provided (a) through public sector mechanisms and (b) through the private sector.

SUB-PROBLEMS AND STRATEGIES

The next sections have the following organization:

— summary of the sub-problem, proposed strategies and proposed activities

— background of NIE's involvement in the sub-problem

Strategy packages that address the sub-problem are found in another section of this program plan.

Depending on the NIE budgets and evaluation of the ideas over the coming months these are requests for funding.

Sub-Problem 1

Many people lack information and career counseling services which could help them make better educational and occupational decisions.

Strategies:

1. Increasing our understanding of the career decision making process, of what information and career services are lacking in special populations, and improving assessment of career information and career decision making skills.

2. Learning how to reduce early socialization into restricted occupational choices in subgroups such as girls and women where such restrictions must be reduced or where later career counseling will be of limited value.

3. Finding out how to expand and improve career counseling and career information services to inform policymakers about the relative costs, feasibility and pay-off of different approaches.

Activities:

1. Continuation of research on the career development process and career decision-making. (See Strategy Package 1, Activity 3a)

2. Development and standardization of measures of career information and career decision-making skills. (See Strategy Package 1, Activity 3b)

   - review existing measures and develop new ones
   - conduct national baseline and standardization study
   - prepare kits for use by SEAs and LEAs in evaluating career decision-making and career information programs (See Strategy Package 2, Activity 3b)

3. Encouraging infusion of sex and race fair career information in basic primary texts (See Strategy Package 2, Activity 3a)

4. Television program, with teacher and parent guides) to expand career awareness in young children (See Strategy Package 2, Activity 3b)

   - develop program
   - develop parent activity guides
   - develop teacher activity guides
   - develop in-service orientation materials

- evaluate program effects
- adapt materials for inclusion in Education-for-Parenting programs

5. Report on the costs, characteristics, feasibility, and outreach of major approaches to providing career counseling services such as computer-based systems, self-instructional materials, paraprofessional counselors and community resource banks, etc. (See Strategy Package 3, Activity 3a)

6. Prepare materials to train counselors in ways of involving parents in the career counseling process. (See Strategy Package 3, Activity 3b)

7. Test the costs, feasibility, outreach and effectiveness of new ways of delivering career counseling to adults considering mid-career change, to minority women, and to adults in rural areas. (See Strategy Package 3, Activity 3c)

8. Develop in-service and pre-service training materials for counselors, paraprofessionals and administrators, based on recent research findings and changes in practice. (See Strategy Package 3, Activity 3d)

Background of Sub-Problem 1:

Many people lack information and counseling services which could help them make better educational and occupational decisions because:

1. Even though much is known about career development the knowledge base is not adequate in some areas to move ahead with program development and improvement. This problem will be reduced by (a) completion of career decision making research initiated in FY 1976, (b) new research on role models and the career counseling needs of special groups such as incarcerated women, and (c) improvement of measures of career information and career decision-making for high school students and adults.

2. Some groups have been socialized at an early age into occupational self-concepts which are unduly limited by sex, ethnicity or social class--factors which often impact career aspirations, expectations, career commitment, and consideration of career alternatives.

3. Many students and adults lack decision-making skills (i.e., how to put information together to make a realistic career decision), and seek the assistance of career counselors and advisors. Career counseling services are typically limited of uneven quality. Counseling provided in the schools is seldom coordinated with career advice provided by parents although research has shown parents are influential in their child's career planning. Parents are an almost shockingly underutilized resource in formal counseling programs.

   Counselor training has lagged behind changes in the knowledge base contributed by research and pilot programs. While many ideas for expanding and improving career counseling have been suggested, few have been tested. Educational policymakers lack reliable data on what different approaches provide in the way of information and service, how much they cost, how effectively they reach their target populations, and what the pay-off would be for different services. In some instances, information exists but hasn't been brought together. In some instances, the information doesn't exist because approaches have been developed, but not tested. In other instances, approaches designed to meet the identified needs of special groups do not presently exist.

   This problem may be reduced by (a) bringing together information on program characteristics, costs and outreach for the major career counseling programs, (b) testing ways to help counselors involve parents in the school-sponsored career counseling programs, (c) testing new ways of providing career information and guidance to mid-career adults, minority women, and adults in resource-poor areas, and (d) preparing materials for in-service and pre-service training of counselors, paraprofessionals, administrators and teachers based on recent research and practice.

Sub-Problem 2

Few people have the opportunity to explore a range of alternative careers prior to making educational and occupational decisions. Career exploration offers the individual involvement with the texture and substance of occupations through direct observation and participation. This involvement will improve career decisions by allowing the individual to better match the choice of educational programs at the secondary, post-secondary and continuing education levels with career goals.

Strategy

Testing the costs, feasibility and effectiveness of selected ways to expand career exploration opportunities for junior high school students, senior high school students, and post-secondary students.

Activities

1. Develop and test programs for junior high school students through expansion of career exploration in voluntary organizations such as the Boy Scouts and Girl Scouts (see Strategy Package 4, Activity 3a)

2. Testing career exploration programs currently operated for senior high school students by voluntary organizations such as Junior Achievers and Explorer Scouts (see Strategy Package 4, Activity 3b)

3. Field test and market trials of Experience-Based Career Education (see Strategy Package 5, Activity 3a)

   - provide technical assistance to field test sites
   - provide technical assistance to market-test sites (LEAs wishing to adapt the program)
   - provide technical assistance to sites testing EBCE under VEA Part D
   - test state level changes needed to finance extra costs of EBCE and implement program
   - provide information and technical assistance about all EBCE models and other EBCE-like programs to SEAs and LEAs
   - evaluate program materials, training and effectiveness in field test and market trial sites

4. Trial test in-school work experience programs to assess their effectiveness in expanding career exploration opportunities for youth (See Strategy Package 5, Activity 3b)

   - grants to LEAs to develop and test these programs
   - evaluation of implementation and effectiveness
   - policy studies and planning for dissemination

5. Prepare materials for in-service and pre-service training of SEA and LEA learning site and community resource coordinators and supervisors (see Strategy Package 5: Activity 3b)

6. Develop and test career exploration programs at the post-secondary level for proprietary and community college students, students in four-year colleges and adults planning to re-enter the labor market (see Strategy Package 6)

   - report of planning conference
   - grants to educational institutions to develop ways to provide career exploration
   - evaluation of program effectiveness

Background of Sub-Problem 2:

Almost every commission on the reform of secondary and post-secondary education and on ways to improve the relationship between education and work recommends expansion of work experience programs in which students could learn the adult world, the range of alternative careers, and the texture and substance of different occupations. However, opportunities for such career exploration are presently very limited. Although many appproaches to expand career exploration have been suggested, the tradeoffs among them in terms of costs, acceptability in the local situation, feasibility, and payoffs for learners are not known. Educational policy-makers have been hesitant to expand career exploration without this information and some key groups have been opposed or skeptical to expansion due to concerns that may or may not be justified in practice, such as the fear career exploration would mean loss of jobs for teachers, adults or employees. In addition, most career exploration programs are available only to high school students. Research has shown, however, that career exploration is hypothetically an effective way of improving educational decisions at the junior high school level and that it may be equally valuable educationally for post-secondary students. The information that follows highlights the state-of-the-art in this regard.

* The National Longitudinal Study of the High school Class of 1972 showed that over 76% of that class were employed at least part time on a paid or unpaid job during their senior year. This percentage remained relatively constant for so-called 'general', 'academic' or 'vocational' students. If this figure is accurate, one might logically ask why expanded work experience programs need to be promoted. Unfortunately, the quality of the existing work experience being received by many students appears to be very low. For example, of those employed students in the Class of 1972, just over one-third worked at jobs they felt would lead to work they would like to do in the future. In addition, only 13.5% of them were engaged in work experience programs which were related to their studies. This was apparently of concern to the students in the sample because even though over 76% were engaged in some type of paid or unpaid work, 59% felt their schools should have provided more practical work experience. These data seem to suggest, therefore, that a vast majority of students work primarily to earn money or credit but feel this is not sufficient and would prefer that their work or unpaid work, 59% felt their schools should have provided more practical work experience. These data seem to suggest, therefore, that a vast majority of students work primarily to earn money or credit but feel this is not sufficient and would prefer that their work experience also be related to their educational program.

See also, Panel on Youth of the President's Science Advisory Committee. Youth: Transition to Adulthood. Washington, D.C.: U. S. Government Printing Office, 1973; John Henry Martin, National Panel of High Schools and Adolescent Education, Department of Health, Education and Welfare: U. S. Office of Education, in press; National Commission on the Reform of Secondary Education. The Reform of Education: A Report to the Public and the Profession. New York: McGraw-Hill, 1973; Systems Development Corporation, An Assessment of School Supervised Work Experience Programs. Contract No. OEC-0-72-5024, September 1973; and Interagency Panel on Expanded Work Experience. "Expanded Work Experience: Initial Report to the Special Assistant to the Secretary for Interagency Affairs, Department of Health, Education and Welfare, October 1974 (mimeo).

Approach	Characteristics
Create an entirely community-based career exploration program	This is being tested in EBCE. While not intended to replace the high school program for all adolescents, those students desiring this option obtain highly effective indepth career exploration while meeting the requirements of a regular high school diploma. Even rural or resource poor areas are operating EBCE with imagination and continuing community support.
Provide briefer internship experiences	May be less costly, well adapted for senior high school students, community and four year college students and mid-career adults. Involvement and range of exploration more limited than EBCE. Concern on part of labor that internships may take jobs away from adults. Being tested in FY 1976 for high school seniors through evaluation of the Executive High School Internship program.
Expand work-experiences and career exploration within schools	May require considerable restructuring within the school. May be well adapted for rural and resource poor areas as an alternative for students below 16, and to bring together academic and vocational education under the supervision of regular classroom teachers. May require fewer changes in laws regulating attendance, academic credit and child labor.
Expand career exploration through youth organizations	May be a low cost, wide outreach approach that avoids problems with teachers and labor unions. Builds on high levels of participation among junior high school students. Does not presently provide academic credit as EBCE and internships do; quality of career exploration and what is learned is unknown.

Approach	Characteristics
Expand career exploration component of work-study programs	Builds on existing programs now used primarily for skills training; in high school, may be limited to students eligible for vocational education. Probably low-cost and consistent with recent evaluations of Federally funded work study and work experience programs and opportunity to improve value for career exploration in CETA projects.
Expand career exploration opportunities through the initiative of the business, industry and labor community	Begins at the point where resource limitations have been of greatest concern. Approach being tested by NIE in one state during FY 1976.
Improve quality of what is already happening by better training for learning resource coordinators and community resource people	Consistent with the assumption that one way to expand opportunities is to upgrade the skills of persons doing similar chores or who might transfer to other options.
Develop summer youth career exploration programs through schools, voluntary groups, or special grants projects such as the Canadian youth opportunity project	May be high cost, but constructive way to use what is often down-time for youth below 16 or youth who otherwise have problems finding summer employment. Can adapt and try out successful models from other countries. May balance out the demands on community resource sites.
Provide intensive career exploration short-courses	Probably fairly low cost. Could be coordinated with use of media and the university-without-walls model. May be very well adapted to needs of adults considering mid-career changes.
Expand simulated career exploration programs and other within-classroom ways of providing intensive investigation of various careers	Being tested through the NIE-funded Occupational Exploration Program for junior high school students. Appears well-received and effective, particularly for rural or resource poor areas. May need more active involvement and hands-on experience for students. Overcomes problems in transportation, child labor laws, and labor and teacher concerns.

As the above information suggests, ideas abound but facts are scarce. The strategies recommended for subproblem 2 are (1) selecting what seem to be the most promising approaches and finding out how much they cost, (2) determining what operational problems emerge in large-scale application and how they may be solved, and (3) organizing this information for short-term technical assistance and ready access by educational institutions and policy makers interested in expanding career exploration.

Depending on the results of FY 1976 state-of-practice surveys, FY 1977 may see the use of "natural laboratories" or support for development and testing of the selected approaches. One by-product of the FY 1976 survey will be a report for educational decision-makers of what is happening in career exploration, extra costs of the programs, feasibility, and characteristics. Information on effectiveness is expected to be limited but will be reported in FY 76. By FY 1978 solid information on effectiveness should be emerging from these projects.

Sub-Problem 3

What should schools teach to prepare students for careers, avoiding the problems of overly-narrow and of overly-broad or irrelevant preparation? While there is considerable agreement that one purpose of education is to help prepare people for work, there is considerable disagreement on what kind of preparation would be most helpful, particularly in a time of rapid occupational change.

Strategies

1. Establish ways of conceptualizing occupational requirements and educational programs that will be most useful in identifying what schools should teach to prepare students for careers.

2. Determine the feasibility, costs, and effectiveness of different approaches to educational planning for career preparaiton.

3. Improve what educational institutions can do to certify occupational competencies in ways that are both nondiscriminatory and relevant to occupational performance.

4. Learn how schools can increase educational equity in career preparation of women.

Activities

1. Conduct short-term policy studies and research on career preparation as a responsibility of educational institutions.

2. Analyze the concept of transferrable skills in comparison to other ways of finding out what would best prepare students in a time of rapid change in needed occupational skills. Learn what general and transferrable skills are needed in selected (a) emerging new job fields, (b) chronically undersupplied fields, and (c) fields affected by underemployment or unemployment. Prepare alternative recommendations for curriculum changes at the secondary and post-secondary levels to improve career preparation based on these examples.

3 Continue community consortia and councils funded in FY 1976 to coordinate educational planning for career preparation and development. In sites selected, focus on curriculum development, certification and placement and other ways to improve career preparation of the graduates of local institutions, and evaluate the costs, feasibility, and effectiveness of these organizational models.

4. Survey the state of practice in occupational competency assessment following recent court decisions prohibiting use of employer selection critieria whose effects are discriminatory and whose relevance to on-the-job performance is not demonstrated. Conduct research to improve the methodology of occupational competency assessment from the perspective of educational institutions.

5. Determine the extent to which new legislation such as Title IX of the Education Amendments of 1972 and new programs such as the Women's Educational Equity Act are being implemented and have affected equality of career preparation for women.

6. Test new approaches to increasing the number and competency of women who are prepared for the better-paying, higher-status and open-opportunity fields from which they are excluded as a consequence of constricted occupational preparation.

Background of Sub-problem 3:

Related Institute-funded projects transferred from the Office of Education and scheduled for completion in FY 1976 focused on two aspects of career preparation: development of basic skills and training in job entry skills. For example, the Mountain Plains Education and Economic Development program's career preparation component emphasized reading and arithmetic for adults with less than fifth grade reading levels as well as training in such areas as office work, tourist industry, and mehanical repair trades. Development of good work habits (punctuality, completing an assigned task, doing one's best) were also stressed in these programs. Other transferred projects included research on occuptional task analysis, competency based materials for training vocational educators, and planning guides for vocational education programs.

In FY 1975, several short-term planning studies related to occupational preparation were begun: studies of (a) sex restrictions on occupational preparation, (b) alternative approaches to coordinated educational planning and services, (c) the concept of mobility and career preparation; (d) what educators and employers thought occupational schools should do and should avoid in career preparation, and (e) the educational and economic negotiability of non-traditional credentials such as the GED.

On the basis of these planning studies and meetings with researchers, labor union leaders, employers, educators and representatives of other Government agencies, it became clear that there is a role for Federally supported education research in career preparation that is uniquely suited to NIE. That role is to develop and test alternative conceptual frameworks that will guide schools in providing career preparation, finding out the causes for lack of

career preparation, testing the effectiveness of different organizational models of coordinated planning for career preparation, and through policy studies and research on career-related educational issues, provide a forum for thorough analysis of the evidence and of action alternatives in this area.

This role differs from that of the Office of Education's vocational education and career education responsibilities, which are more operationally oriented. It differs as well from the Department of Labor's responsibility for labor market supply/demand forecasting and manpower training.

Sub-Problem 4

How much financial assistance is available and the conditions under which it can be used may make the difference between programs for continuing and recurrent education for career development which look good only on paper and programs which are actually used by large numbers of learners. There are two main questions in financing continuing and recurrent education: the first is who should pay, and the second, the effect of how financial support is made available on participation and completion rates.

NIE is concerned with the second question: the effects of conditions of financial support on participation in the completion of post-secondary education. The focal group is adults between the ages of 25 and 55 who have at least a high school diploma or equivalent, who want part-time rather than full-time education, and who need continuing education either to enter or re-enter the labor market or for career development while working.

Strategy

Determine what levels of assistance, eligibility requirements, and other conditions of use of financial support for continuing education for the focal group will result in high levels of participation and completion when funds are provided through public sector mechanisms and when financial assistance is provided through the private sector.

Activities:

1. Experimental test at the state level of the hypothesis that increased participation rates for the focal group will depend on availability of supplementary assistance for education-related expenses as well as direct and indirect tuition assistance.

2. Evaluation of the effect on participation rates for the focal population of varying levels of financial assistance, conditions of eligibility, and other conditions of use through the "natural laboratory" of various state-level plans suitable for financing life-long education.

3. Short-term policy studies of modifications of existing programs or design of new financial aid plans for employees of small businesses, the self-employed, and professional/technical personnel.

4. Evaluation of the effects of changes in private sector financial aid plans on the participation rates of workers, using "natural laboratory" designs.

5. Inform educational policy makers of the findings of five years of cross-national studies on ways of increasing access to life-long education for career development purposes.

Background of Sub-Problem 4

Studies of ways of financing adult continuing education for career development purposes has been part of program activities since 1973 when the Institute completed editing and publication of the report of an international symposium of financing recurrent education initially funded by the Office of Education. As a follow-on study, the Institute supported in FY 1974 two short-term activities. The first was a cross-national conference reporting on the new public sector programs for financing recurrent education for workers enacted in France, West Germany and Great Britain. The papers (now being edited for publication) discussed the context of the new legislation, why new financial support was needed, alternative schemes considered, why the current approach had been selected, and early experiences with program participation, costs, implementation and achievements. These papers, discussed in an October 1974 workshop which brought together representatives of labor unions, large industries and the research community in the United States, all pointed to the problem of the effect of conditions of use and eligibility on participation, particularly the wide-spread experience of low particiption among the less well-educated, lower status workers whom the programs had been most intended to benefit.

The second activity was the preparation, under contract to the Organization for Economic Cooperation and Development, of a series of reports on the effects of conditions of use and eligibility of financing programs for adult continuing education for career development by the private and public sector in ten European countries. A companion study for the United States was also commissioned. These reports were discussed at a December 1974 international conference; the papers and recommendations are now in press as an OECD publication.

These studies, and discussions with representatives of labor, industry and education have confirmed that financial assistance for post-secondary education for adults is likely to expand during the coming decade, and that very little is known about the effects of different conditions of support on participation rates. There seems to be a consensus that without such information, financial assistance plans for adult learners may look far better on paper than they are in practice, when measured by participation and completion rates.

Strategy Packages

STRATEGY PACKAGE 1: IMPROVING OUR UNDERSTANDING OF HOW PEOPLE MAKE CAREER DECISIONS AND MEASUREMENT OF CAREER INFORMATION, CAREER AWARENESS AND CAREER CHOICES.

1. The problem

While much has been learned from research on career decision-making and occupational choice, there are still some substantial gaps in our knowledge of career development. These gaps are delaying some aspects of program development and improvement. In addition, much assessment has focused on vocational interest measures as a source of information for career choice and not on assessment of occupational values, occupational information, or the process of making career choices. These are usually inferred from such evidence as subsequent dissatisfaction with educational or occupational choices, dropout rates and income. Since other factors in addition to the wiseness of a career decision affect these indicators, and since most require a considerable follow-up period after the choice, program evaluation and needs assessment for program development in career education have been hindered by problems in measurement. Almost every group consulted (the USOE Office of Career Education, the Director of the Fund for the Improvement of Post-Secondary Education (FIPSE), a national conference of career educators, a national conference of chief state school officers which focused on career education) has urged that the Institute do something--on a substantial scale--to improve measurement.

2. Recent history

With regard to understanding the career development and decision-making process, some research was supported through the Office of Education through the "labs and centers" programs* which were transferred to the National Institute in 1972. In addition, the National Institute of Mental Health has funded some research related to career and occupational development as it is related to stress and other indicators of mental health problems. Through the Department of Labor (DOL) and the National Science Foundation some basic research from the perspective of economists on the relation of education to employment and of various factors to educational attainment has been supported. It is fair to say, however, that the only systematic research program on career development and decision-making is that supported by the NIE. This is an activity unlikely to be supported by states or by other agencies.

*Regional laboratories and various research and development centers have provided a decade of service to education primarily through Federal contracts and grants.

Development of instrumentation for career education measurement, primarily for secondary school students, has been supported largely by the private, for-profit sector. Most of these measures would be considered career maturity or career interest inventories. SEAs such as Texas are preparing statements of career education objectives and procedures for needs assessment. These needs assessment approaches are in the early stages of development and typically include a wide variety of life competency outcomes. There are also reviews of available measures such as the UCLA Center for the Study of Evaluation Guidebooks, the special reviews of career decision-making tests commissioned as part of evaluations of NIE-sponsored projects, and the report by Developmental Associates funded by the USOE Office of Career Education.* These all tell essentially the same story: improved measurment of career information, measurement of the quality of career choices and of the career choice process and other aspects of career awareness are urgently needed. While practitioners are using a variety of home-grown or best-fit measures, a major improvement of measurement of career information and decison-making is not likely to occur without Federal support. Meetings with USOE, FIPSE and DOL have made clear that these agencies are not taking on this task but regard it as highly important, believe it is beyond their authorized activities, and have urged NIE to move forward in this area.

3. Proposed FY 77 Activities

a. Increasing our understanding of how people make career decisions, and how the decision-making process can be improved. (1) One of the multi-year studies undertaken in FY 1976 and to be continued in FY 1977 is concerned with what the most important educational and occupational decision points are throughout the individual's lifetime, when the "decision" appears to get made, what influences these decisions most, and what competencies (cognitive and non-cognitive) are important at various points. For example, some observers think that decisions regarding high school courses probably are made during the last part of the ninth grade and early tenth grade and that improved information, guidance and counseling at this time probably will substantially improve high school plans. Research has not indicated how far back these decisions originate, when they become "locked in," or if they are fairly open perhaps as late as the eleventh grade. (2) The second set of multi-year studies looks at how occupational interests, attitudes and personal tendencies are shaped and how they interact with educational and recreational experiences in developing occupational choices. For example, the individual's perception of her/his personality and talents is an

* UCLA, Center for the Study of Evaluation, Arthur Koroptkin, "Measuring the Effectiveness of Dropout Prevention Programs," American Institutes of Research: Washington, D.C., 1975; Developmental Associates.

important component of the career decision-making process but little is known about how these interests are formed, and the role of home, school, peers, media and the community in forming these. (3) The third set of multi-year research studies examines alternative futures and how these might affect career decisions made in this decade, in changing family roles, educational opportunties, economic constraints on life style, and what adults of the future may need to do to secure a satisfactory life. (4) In addition, two new studies will be supported in FY 77. (a) An indepth study of how economic, psychological and sociological occupational information is used in selected career decisions. Most studies use longitudinal self-report data to infer influence on levels of occupational and educational attainment through correlational analyses. Research on what occupational information influences actual decisions being made are almost nonexistent. (b) Research on the psychological and sociological influences of career patterns in minorities and minority women will be supported. Most career development research has been conducted on white males; extrapolation from these data to what career information is needed by minorities and women is possible, but four panels of eminent researchers, theoreticians and practitioners have strongly recommended Institute support of research on career decisions of minorities.

b. Improving measurement of career information, career awareness and career choices. Three activities are proposed under this initiative. (1) First is development of assessment instruments which can be used at the elementary school, junior high school, senior high school, and mid-career ages by males and females from different ethnic groups and in different regions of the country. The instruments (which may involve tests, unobtrusive measures, simulations or other devices) will focus on world of work and occupational information, occupational values, occupational self-perceptions, and career choice processes. When permissible, existing measures developed by LEAs and SEAs, and by publishers will be adapted or adopted as part of the measurement package. (2) A national baseline or standardization survey will be conducted and (3) the results of the review of existing practices, measurement development, and standardization study will be packaged as alternative materials for use by LEAs and SEAs in various stages of implementing programs to improve career awareness and decision-making.

4. Relationship to prior activities conducted by NIE

Despite an expensive literature on vocational development and career choice, there have been few attempts to integrate diverse findings from sociological, psychological, economic and educational perspectives on career development. In FY 1975 (using FY 1974 funds), the American Institute for Research (AIR) studied the career decision-making process, analyzing and synthesizing both the empirical and theoretical literature. The first phase of the

AIR effort reviewed this literature and developed a unified theory which provides a more solid ground for understanding why some people make wise choices and others do not. On the basis of extensive reviews of this work by researchers, developers, theoreticians and educators, specific research priorities of greatest educational value were identified. It is these priorities which will be funded in FY 1976 through research on career decision-making and which will require at least two years of support for completion. As an example of support for this initiative, the American Personnel and Guidance Association is devoting an entire issue of Counseling Psychologist to the AIR study. The issue will present various elements of the study to its readership of over 20,000 researchers and practitioners. In presentations at conferences of the California Elementary Education Association and the Western Regional Meeting of the College Entrance Examination Board, support for the model and proposed activities was extremely strong.

5. Dissemination

Dissemination was built into the original AIR study and will be incorporated from the beginning in the FY 1976 activities by requiring preparation of handbooks and other materials for counselors, educators and parents based on findings from the research. In addition, results of the FY 1976-77 research will be disseminated through regional workshops for counselor educators and incorporated in prototype programs for counselor training to be supported beginning in FY 1977.

As a third dissemination mechanism, the Institute will be working with the Office of Education and the Department of Labor on ways to incorporate the model and research findings into their counselor training and occupational information services.

STRATEGY PACKAGE 2: WAYS TO REDUCE RESTRICTED OCCUPATIONAL SOCIALIZATION IN YOUNG CHILDREN

1. The problem

Socialization apparently begins very early in occupational development. For many, this socialization is an effective way of developing career interests and abilities consonant with family values, educational opportunities, and the occupations currently available in the neighborhood and community. For others, however, early specialization involves a restriction of occupational development that unfavorably affects life opportunities.

Women and minorities seem particularly affected by early restriction of occupational awareness. Adults in these categories are over-represented in a narrow range of lower status occupations. Many economists contend that occupational segregation is one of the primary causes for lower wages of women[1] and point out that it has not declined since 1900; in fact, it has increased 1.5%.[2]

Institutional discrimination plays a major role in limiting people's career options, but not all limitations are due to overt discrimination. Some are self-imposed restrictions derived from differential socialization, other's expectations, misinformation and lack of awareness. The result of this for girls and some ethnic minorities is lower and narrower career aspirations. For example, as early as elementary school approximately 66% of all girls limit their career aspirations to teacher or nurse. At the same age, boys select up to three times as many different occupations as girls. The effect on minority group children takes place a little later--around 12 years of age--but the result is the same: lower career aspirations.[3] The restriction of career options for girls and minority group members continues throughout adolescence and adulthood as seen in a 1972 study which found that over half of the high school girls sampled selected occupations in only three of a possible 25 job categories.[4]

2. Recent history

Federal support for ways to improve career information and awareness for primary school age children has included (a) demonstration program grants funded between 1970-1974 through Part D of the Vocational Education Act (VEA), (b) VEA support for a series of televised for career awareness "spots" that were pilot tested on the Captain Kangaroo program and (c) development of prototype materials to infuse career education into the regular school curricula, funded by both NIE and USOE. Research and policy studies on the question of early socialization of restricted occupational choice in girls and minority groups has been funded since FY 1973 by the NIE and has contributed to the development of this strategy package.

There are no recent efforts supported by the Government to decrease early occupational stereotyping with special attention to girls and minority group members. Indeed, some materials currently available may contribute to the problem by showing women always in subordinate roles and primarily as teachers and nurses.

On the other hand, recent interest in developing sex-fair educational materials (for example, the California regulation prohibiting use of public funds to purchase primary and secondary school texts reinforcing restricted occupational stereotypes) and the popularity of television programs on career awareness for primary school age children suggest a readiness for the development and testing of ways to increase sex- and race-fair occupational socialization.

3. Proposed FY 77 Activities

a. Encouraging infusion of sex- and race-fair career information in basic primary text revisions and new texts. This two-year effort will provide expert advice and editorial support for major primary textbook publishers to develop new texts and revise current editions that infuse sex- and race-fair career information. Cooperating publishers will be selected through an RFQ/RFP process following FY 1976 workshops to develop new guidelines based on current state regulations regarding these matters and consistent with the Federal role in development and adoption of teaching materials.

b. Career awareness for young children through television. This three year development effort, underway in FY 1976, will result in a series of television segments presenting women and men in a variety of life and occupation roles. The FY 1976 activity will: plan the total series, begin pre-scripting, evaluation and re-scripting of the shows; and develop and test one or two 15-minute prototypes. The objective of the programs will be to expand career aspirations of primary age children beyond the limitations of their immediate neighborhood, particularly for women and ethnic minorities.

The need for parental involvement in this effort is illustrated by research which shows that parents are the most important influence on childrens' career aspirations and educational plans.[3] Therefore, as a vital component of this program, parent guides with orientation materials and suggested follow-up activities will be developed.

Other key components to the success and quality of the program include program evaluation to assess the impact of the program; teacher guides; and in-service training for administrators, staff and community outreach personnel.

A supplementary activity will apply materials developed during the series for use in the Office of Child Development and USOE-sponsored Education-for-Parenting programs now being field-tested across the country.

4. Relationships to earlier work

In FY 1974 a grant was awarded to Drs. Leifer and Lesser of Harvard University to review and synthesize the literature on the development of career awareness in young children. This grant built on an earlier study by Barnett funded in FY 1974 on the development of occupational socialization. The Leifer-Lesser study, completed in FY 1975, not only reviews existing materials and programs for children such as Bread and Butterflies and the USOE "Landof Could Be You" Captain Kangaroo materials, but also specified alternative designs for developing new programs. One of the most promising alternatives proposed television as a vehicle for broadening children's awareneess of occupations. Based on early information, the FY 1975 and FY 1976 planning projects on children's career awareness and television were authorized.

5. Dissemination

Dissemination is inherent in TV programming. The proposed funding mechanism will build on experiences with the Agency for Instructional Television and Children's Television Workshop with regard to state, school, and home adoption. The Agency for Instructional Television, for example, involves a consortium of educational and broadcasting agencies, including state departments of education, ETV networks, ETV commissions and local educational agencies.

6. References

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(3) Rosalind Barnett and Grace Baruch. Occupational and Educational Aspirations and Expectations: A Review of the Empiral Literature. Paper prepared for the National Institute of Education, 1973.

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STRATEGY PACKAGE 3: FINDING OUT HOW TO EXPAND AND IMPROVE CAREER COUNSELING AND INFORMATION SERVICES

1. The problem

Almost every report on the reform of secondary and post-secondary education and lifelong learning has stressed the need for expanded and improved career counseling. For example:

- A nationwide study of career development found that over three-fourths of the 32,000 high school students surveyed "would like help" with career planning. The needs of these students were so severe that the authors concluded, "If we were speaking of physical development rather than career development, we would describe American youth as hungry, malnourished and physically retarded."[1]

- Another survey found that the majority of students selected their high school courses because they like the curriculum and not on the basis of the kind of careers completing this program would enable them to enter.[2] This finding, together with the conclusion that almost 2.5 million youth yearly are leaving school unprepared for either further education or for work[3] suggests that better decisions could be made on what to study in high school.

  Another survey found that only 18% of a sample of 2,500 high school juniors had educational and occupational plans consistent with their interests and abilities.[4]

- An estimated 14 million adult Americans want to continue their education but lack information about where to get the education they need to reach their career objectives or are uncertain about what objectives they should be preparing for.[5]

- The highest priority recommendation of the National Science Foundation supported Rand study on mid-career redirection was that adults urgently need career information and career counseling.[6]

These data suggest that career information and counseling are needed as well as wanted before decisions on high school courses are made, before high school graduation and before adults embark on educational programs for mid-career change.

2. Recent history

Federal support of ways to improve career counseling include (a) training for high school counselors through the Education Professions Development Act, a program which has not had much money for counselor

training in recent years, (b) demonstration programs to improve career counseling for youth planning to enter occupations which do not require baccalaureate degrees funded by the VEA, Part D; (c) occupational information systems scheduled to begin prototype operations in several states during FY 1976 through Department of Labor support; and (d) the development of counseling materials for youth, a career guidance planning system for LEAs, and a prototype career counseling delivery program for adults funded by the National Institute of Education. In addition career counseling is incorporated as a component of educational programs for disadvantaged youth and adults and in some community mental health programs.

However, there has been virtually no support for career counseling at the end of junior high school, a silent age in terms of Federal attention. Little is being done to involve parents in school-sponsored career counseling although research clearly shows how parents are influential in high school and post-high school planning.

Programs to improve career counseling in high school are available--computerized systems, experiments with paraprofessionals and community resource banks, self-instructional materials, etc. However, information about the costs, services and content of these programs, is scattered, non-uniform, and difficult to obtain. LEAs and other educational institutions who want to expand their career counseling services have a hard time finding the information that would help them know what to do.

Activities to improve career information and counseling for adults are presently limited to fairly expensive for-profit counselors. Some voluntary organization centers such as B'nai B'rith have been highly esteemed by leaders in the field of adult vocational counseling. However, since most have been designed for the college bound and are based on research on white males, they are regarded as inadequate for populations like minorities and women. Little is also known about how to expand availability to meet the mid-career counseling needs of 13 million adults.

Finally, a special study on counseling, guidance and placement conducted for the Education and Work Task Force during FY 1975 by JoAnne Harris Bowlsby surveyed the state of practice and practitioner-reported needs. Bringing counselors up-to-date on the latest research and experimental studies and providing leadership in counselor training which has been dormant since EPDA is a highly recommended way to improve the quality of currently available counseling. These findings are consistent with policy statements from the American Vocational Guidance Association and the American Personnel and Guidance Association on the need to upgrade in-service and pre-service counselor training.

3. Proposed FY 77 Activities

a. Analysis of available counseling services. Based on a national survey of existing programs, selected to represent the exemplary practice in different major approaches, a report for LEA and SEA policy makers will be prepared. The report will inform these policy makers on the costs, the nature and content of the information and services provided, feasibility and outreach of these major approaches. Few effectiveness data are expected but reliable information that is available will be analyzed. Such a report will help a superintendent of schools, for example, know why one computer-based system costs more than another, to anticipate comparative installation problems for a self-instructional materials center versus adding paraprofessional counselors to the staff, etc.

b. Parents as supports for Counselors: A large body of literature suggests the family is the most important influence on educational and occupational decisions. Almost nothing is being done to find out how schools can involve parents in a supportive role for school-initiated career counseling. This activity will be targeted at counselors to increase their awareness of the family as a "primary influence" and assist them in bringing the school and parent together to change the nature and direction of parental influence on her children. Materials will be developed to train counselors in ways to involve parents in the counseling process. During the second year of the project, these materials will be field-tested through a national panel of cooperating schools.

c. Developing new ways of delivering career information to mid-career adults, minority women, and adults in resource poor areas. Some approaches to career counseling for adults are already available. Through an Educational Development Center project in Providence, R.I., the Institute has developed and tested one approach (telephone counseling by paraprofessionals) for home-based adults. There are, however, more specific subgroups where the need for career development is great. Examples are minority women (many of whom are either heads of households or whose income is required to maintain the standard of living of a joint household) and adults living in rural, resource-limited areas (who are often severly affected by economic and technological change).

Three approaches will be made: (a) ten model programs developing ways to provide career information and counseling to minority women which take into account the probably different life-circumstances, cultural background and experiences vis-a-vis formal education and the workplace than the majority women on which most programs have been tested to date; (b) five programs testing out ways to provide career information and counseling to mid-career adults in low-resource, rural, economically impacted

areas; and (c) an evaluation study of exemplary large-scale programs bringing together information about costs, processes and payoff from NIE-supported and other career counseling projects for mid-career adults.

d. Developing materials and programs for pre-service and in-service training of secondary and post-secondary career guidance counselors, paraprofessionals and administrators. The hiatus in EDPA funds for career counselors plus the substantial increase in recent research and experience on career decision-making means that some presently trained counselors may need in-service training, and that prototype materials to keep new counselor training abreast of recent findings is needed. If career counseling becomes as emphasized as many recent commissions on educational reform have urged, there will be an undersupply of training personnel.

A staff development program with supporting materials will be prepared for use in in-service and pre-service training. The handbooks and training modules will incorporate the latest findings from research, experience and exemplary programs. Modules will be designed for (a) retraining and updating counselors in high schools, colleges and private agencies, (b) paraprofessional and community resource advisor training, (c) school administrators and supervisory staff, and (d) those entering the field of counseling for the first time or as part of mid-career redirection. This will be a two year project. In the first year, the modules will be designed and pilot tested. In the second they will be disseminated through regional workshops training counselor and administrator trainers.

4. References

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STRATEGY PACKAGE 4: EXPANDING CAREER EXPLORATION OPPORTUNITIES FOR JUNIOR HIGH SCHOOL STUDENTS

1. The problem:

One of the most important career decisions a young person makes is what she or he will study during high school. For many students, there is little formal education after high school and thus the opportunity to prepare for the student's life work may be concentrated in those three years. For students continuing their education, what is studied during high school may facilitate or constrain later educational choices. For example, a general curriculum student who decides at 22 to study medicine will have difficulty catching up on the mathematics and sciences needed as prerequisites for medical training.

In-school career exploration activities through filmstrips, special projects, simulations and other well-planned programs are of value in helping a young person investigate enough careers in enough depth to make an informed choice of high school programs. However, more exensive career exploration may be the most effective way of showing a young person what different kinds of work are really like and how well she or he might like them.

Providing these experiences for junior high school students has posed a challenge. Time in school is often concentrated on academic subjects. In addition, the impact of child labor laws on career exploration experiences for children under 16 and lack of programs such as work/study and cooperative education which might be upgraded or expanded suggest that restructuring within the school might be more difficult for junior high school than for senior high school students.

Nevertheless, the need is great. There are some examples abroad, such as the Swedish PRYO program (required career exploration for all eighth grade students) which show both the feasibility and the benefits of career exploration at this age.[1]

2. Recent history:

Junior high school is a silent age in educational innovation. Career education programs supported between FY 1971-1974 through Vocational Education Act Part D funds and those being developed by school systems[2] conceptually include activities for junior high school students, as part of K-12 comprehensive programming. However, while career exploration is shown as beginning during junior high schoool, few programs involve hands-on, extensive career exploration for students with a focus on planning their high school programs. The Institute has funded, and will complete in FY 1976, development of a career exploration program for

junior high school students to be used as part of the regular classroom program. While this Occupational Exploration Program has been well received, review groups and national commission reports have advised experimental tests of ways to expand more hands-on career exploration at this age. Working with the youth organizations in which many young people of junior high school age are active or creating more of a work experience in the schools themselves have been suggested as promising approaches to test.[3]

Approximately 15 million adolescents from 12 to 18 years of age belong to one or more voluntary community based youth organizations. These include Boy Scouts, Girl Scouts, Explorers, Police Athletic League, 4-H Clubs, Future Farmers of America, and Junior Achievement. Participation in general-interest organizations such as the Scouts is greatest during junior high school years while participation in more specialized organizations such as Future Homemakers of America is greater for high school youth. Some programs emphasize serving both the social and educational needs of adolescents. The 4-H Clubs, for example, provide specific skill training in agriculture and homemaking; they do not have extensive programs for younger students who primarily want to explore this area. The Exploring program, serving adolescents from 14 to 21 years of age, has career exploration as a primary objective. The Boy Scouts, on the other hand, primarily serve a younger age group and, to date, career exploration has been subordinate to social needs and to building character through community service and active outdoor skills.

Despite differences in objectives and style among youth groups, they share similar traits. These include (a) a demonstrated appeal to large numbers of youth, (b) orientation to community service, (c) informal educational objectives achieved through recreational activities, (d) substantial contacts with schools and the community, and (e) an increasing desire to incorporate career exploration as a major educational component of existing programs.[4]

3. Proposed FY 77 Activities

a. Career exploration for junior high school students through voluntary organizations. During FY 1977, following FY 1976 workshops on career exploration through voluntary organizations, a two stage grants competition will be held for youth organizations interested in this activity who can also demonstrate an existing school/community/workplace network, financial commitment beyond the Federal grant, strength of national/local ties, and previous education activities. During the first stage, five planning grants will be awarded; following an aproximately six months planning effort, two or three organizations will be selected to receive grants supporting two-year pilot efforts. If these prove feasible, the organizations would be expected to expand these programs throughout the country with a minimum of Federal transition support.

b. Finding out what works and why in career exploration programs for senior high school students, using voluntary organizations. The study will examine participant characterstics, outreach, program activities, career development among participants, costs, leadership training, and supervisory/quality control, and other aspects of career-oriented voluntary organizations for senior high school students. The purpose of this study is to learn how existing organizations work in enough detail to examine expansion of their services to communities not presently served by a career exploration alternative.

4. References

(1) Robert K. Belding "Real Work Exposure for All Teenagers--The Swedish Way," Journal of Career Education, Vol. 1, No. 3, Winter 1975, pp. 32-33.

(2) Rupert N. Evans, Kenneth B. Hoyt and Garth L. Mangum. Career Education in the Middle/Junior High School, Olympus Salt Lake City, 1974. See also Larry McClure, Career Education Survival Manual, Olympus Publishing Company, Salt Lake City, 1975, section on "Career Education."

(3) National Commission on Resouces for Youth. New Roles for Youth in the School and in the Commmunity. New York: Citation Press, 1974.

(4) Based on meetings over three years with representatives of youth organizations, there is keen interest in testing out the value of expanded career exploration through voluntary groups and an intent to continue if the pilot test is successful.

STRATEGY PACKAGE 5: EXPANDING CAREER EXPLORATION OPPORTUNITIES FOR SENIOR HIGH SCHOOL STUDENTS

1. The problem

It has become apparent in recent years that both educators and citizens desire changes in secondary education which will more realistically prepare youth for adulthood. The nature of such changes is open to debate. Some consider a strong liberal education as the best preparation for a changing world. Others, including the President's Science Advisory Committee Special Panel on Youth chaired by James Coleman,[1] the Kettering Report on Secondary School Reform,[2] the White House Conference on Youth,[3] and observers such as Friendenberg[4] have noted that the school environment alone is inadequate to provide for full personal and occupational development because youth are unduly segregated from the range of adult roles and experiences.

Career exploration is concerned with opening the adult world to youth by bringing school and work closer together through programs that help high school youth make educational decisions which anticipate post-graduate plans.

Numerous suggestions for expanding these opportunities have appeared in the past five years of interest in work experience or work exploration programs. These ideas include using the community as the primary locus for student learning; developing public service internships or youth corps or summer service programs; and changing what happens within the school so that there are many more opportunities for young people to learn about adult responsibilities and what different kinds of work are like. Expansion and upgrading of programs currently providing work experience, such as cooperative education and work study in high school, are also often recommended.[5]

2. Recent history

Work experience programs for young people have a long Federal history. Most programs, however, are intended to provide specific occupational skills (normally for jobs which do not require a bachelor's degree), to transfer income to young people who otherwise would have to drop out of school, or to prevent juvenile delinquency.[6] While many such programs have had career guidance as part of their service, few have offered systematic career exploration across a wide range of occupations or have given much attention to using the community for career exploration. Some research on how to improve the career exploration component of vocationally oriented work experience has been supported through Part D of the Vocational Education Act. Through the new CETA (Comprehensive Employment and Training Act), administered by the Department of Labor, some career exploration for low-income 14 and 15 year olds is being provided through work experience programs.

Comprehensive K-12 career education programs funded by the Office of Education between FY 1971-1974 also included some career exploration community-based demonstration projects; as yet, little is known about the characteristics of these projects and their effectiveness. A search of the ERIC system suggests reporting is more on conceptualization than on operations, costs, and effects. The innovative Executive High School Internship (EHIP) program initiated in New York City and now being operated in 20 cities is helping high school students explore managerial and executive level positions. The National Institute of Education is evaluating the EHIP program during FY 1976. It also plans further field-tests of Experience Based Career Education (EBCE) initiated in 1970 by the Office of Education and tested "in the laboratory" between 1972 and 1975 by the Institute.

With regard to existing opportunities for in-school career exploration, many high schools offer a few students paid and unpaid work experiences in school offices, libraries and other places where students can be of service or can receive needed income for work the school would otherwise have to pay a non-student to perform. In addition, there are isolated, though exciting instances of in-school work experience programs which involve many students in a wide variety of career situations. These include a Los Angeles high school that operates a shopping center, and many high schools where students learn a variety of design, merchandizing, planning, real estate, banking and construction skills in the building and renovation of houses. These are scattered instances and there has been little systematic work in examining such issues as labor union viewpoints toward on-site experiences, the relative merits of such different approaches as good producing versus service producing activities, or assessing the feasibility of the in-school approach for different types of high schools and students.

While varying in-school work experience programs have been developed by some LEA's, systematically testing them, learning from them, and disseminating good ideas to other school systems is not something LEAs and SEAs are likely to support without additional resources. There has been considerable interest in having the Institute test these ideas, however.

3. Proposed FY 77 Activities

a. Career exploration through community based learning for senior high school students: Experience Based Career Education field testing. The Experience Based Career Education (EBCE) program uses the community as an alternative school classroom providing career exploration and development as the focal point for a comprehensive academic program that results in a standard high school diploma. Students spend most of their time at workplaces in the community accomplishing objectives designed to maximize student learning about what the workplace is like, what kind of human relationships are

developed and what is required to do the kind of work involved. While preliminary findings from the four laboratory and center operated development sites are encouraging, NIE is only beginning to see what happens as additional sites try the concept for themselves.

In FY 1977, seven activities continuing the EBCE field-test begun in FY 1976 will be conducted:

(1) operation of demonstration and training sites for potential adopters who wish to see the program in operation and be trained in program implementation.

(2) Continued technical assistance and training for the second year of operations in the field test sites for each of the four EBCE approaches. This technical assistance and training is usually provided through workshops and materials for LEAs who wish to adapt the approaches but who will not become field test sites (market trial sites).

(3) formative evaluation support at demonstration and field test sites

(4) technical assistance for sites funded in FY 1976 through Part D of the Vocational Education Act where necessary materials and assistance are not fully reimbursed by Part D funds

(5) development and testing in two states of the instructional and financial support necessary at the SEA level for widespread institutionalization of EBCE. (For example, if EBCE costs more how will SEAs help LEAs pick-up the differential costs? As another example, how can EBCE's non-traditional approach to certification of academic credit be accommodated on a large scale and meet existing state graduation requirements?)

(6) operation of a clearinghouse or information center on EBCE and similar experience-based career exploration programs for senior high school students from which potential adopters may obtain information about the characteristics, costs and effectiveness of a variety of programs prior to selecting the approach they prefer.

(7) third party evaluation of the process of EBCE adoption/adaptation and the effectiveness of the program under field test conditions

b. <u>In-school work experience programs for career exploration for senior high school students</u>: One way to combine the often isolated experiences of work and school is to expand the opportunities for career exploration and learning within the high school. This may be

particularly important in a depressed economy where there are fewer workers and less interest in teaching students or where concern for unintended abuse of exploration by using the students as workers is great. At least two different approaches have been tried out on a small scale. One is expanding student-produced services, such as a student-run day care center serving the local community, a credit union run by and for students, student operation of food services, and cross-age tutoring. Students could also produce goods. Projects might include activities such as those at August Martin High School in New York City where potentially college-bound students repair automobiles and are building an airplane. Students could operate small farms, engage in construction, repair small appliances, and produce consumer goods.

During FY 1977, the Institute will select ten school settings for testing alternative approaches to expanding in-school work experience programs. Depending on the results of a FY 1976 survey, either a "natural laboratory" or development awards would be made. Contracts will be awarded to evaluate these and other work-experience like programs and to plan for dissemination.

The FY 1977 funds requested would support:

- grants to schools to test and/or develop in-school work experience programs
- evaluation and research on implementation, costs, characteristics and effects on student career decisions
- policy and planning for dissemination

c. Development of materials and programs for learning resources coordinator training: If career exploration programs are to be expanded and current work experience projects upgraded to improve student learning about careers, the availability of resource staff trained to design learning experiences in the community is going to be essential. A recent evaluation of work experience programs by the Systems Development Corporation identified lack of trained staff as the single greatest problem. On the basis of experiences with EBCE, with the Executive High School Internship Program and other approaches to career exploration for high school students, much will be known by early FY 1977 about how to develop student learning sites, how to recruit and orient community resource people, how to assess student learning, and other aspects of a learning resource coordinator's job. This information should be incorporated into training materials for learning site coordinators. Re-training teachers who may be "surplus" for this new activity or re-training adults with world-of-work experience would help meet the need for additional personnel with this expertise. Incorporation of special materials for CETA and vocational education staff could help

these programs benefit from the detailed training materials developed for the career exploration programs.

In FY 1977, educational institutions will be funded to test materials for pre-service and in-service training of learning site coordinators adapted from the experimental career exploration programs.

4. Relationship to earlier activities

NIE will continue activities begun in FY 1976 with EBCE as part of a three year field-test and implementation effort. Through the demonstration sites, support for technical assistance to market test sites, Part D funding and the states, as many as 200 additional school districts may be implementing EBCE, based on current interest and response. After FY 1978, depending on results, the innovation and its related materials and training service should be ready for broad-scale dissemination.

Internal evaluation studies indicate that the program is feasible in the sense that many anticipated operational problems have been solved. Parents and students are enthusiastic. Community resource groups feel the program benefits the students. Early data show that academic development is not adversely affected by time spent in the comunity and that some aspects of career development are improved by the program. The data came from the 1973-74 year of program operations; 1974-75 evaluation data should provide a more reliable picture of program effects.

5. Dissemination

Dissemination plans have been phased into the three year activity through such components as the information center. Discussions will continue with the USOE Office of Career Education. The Office of Education has set aside approximately $6 million a year for three years for demonstration programs involving EBCE through Part D (awards in Summer, 1976 with initial operations to begin in September 1976). Cooperation with USOE in training learning resource coordinators is being discussed following NIE's FY 77 testing of training materials. Cooperation with CETA would be consistent with discussions of how DOL can use products tested by NIE to improve CETA.

6. References

(1) James Coleman et al. Youth: Transition to Adulthood (Report of the Panel on Youth of the President's Science Advisory Committee) Office of Science and Technology, Executive Office of the President, June 1973.

(2) The National Commission on the Reform of Secondary Education. The Reform of Secondary Education: A Report to the Public and the Profession. New York: McGraw Hill, 1973.

(3) Report of the White House Conference on Youth. Washington, D.C., U.S. Government Printing Office, 1971.

(4) Edgard J. Fredenberg, Coming of Age in America. N. Y.: Vintage, 1963; Edgar J. Fredenberg, The Dignity of Youth and Other Atavisms. Boston: Beacon Press, 1965.

(5) See, for example, An Assessment of School-Supervised Work Education Programs. Contract No. OEC-0-72-5024.

STRATEGY PACKAGE 6: EXPANDING CAREER EXPLORATION OPPORTUNITIES FOR POST-SECONDARY STUDENTS

1. The problem

Selecting the right kind of schooling and the right field of study are important career-related educational decisions. For adult learners, post-secondary education usually involves foregone earnings. The decision to continue formal learning in which fields of study is a large commitment and often a sacrifice.

If changes of majors and drop-out rates are one indicator of the wiseness of these decisions, there is room for improvement. According to one survey, only 38% of the students enrolled in community colleges complete their courses as do only 47% of those enrolling in four year colleges.[1] Since many of the adults re-entering education for career purposes and many youth from lower income families enroll in proprietary and community colleges, unwise decisions may be affecting those to whom the cost of education is greatest. While the reasons for changes in major and drop-outs are not well-known (some students run out of money; others enroll in four year colleges, etc.) several commissions have urged that programs be tested which might help students make better choices regarding amount of education and course of study.

2. Recent history

There are many Federal programs supporting post-secondary career training and preparation programs but none providing support for career exploration for post-secondary students. Career exploration-like programs for post-secondary students are beginning to be available on a small scale in a few places. Some of these are classroom activities; others involve work-study placements which are mostly directed at career preparation. Adult civic and community activities could also be considered as a form of career exploration although, like the programs mentioned above, none of their programs or materials are systematically designed to help adults determine from these work experiences whether they should continue their education, and if so, in what field of study.

3. Career exploration programs for post-secondary students

As part of a grants announcements for career exploration programs for younger learners, the Institute will propose the development and testing of career exploration programs for community college students, students attending four year colleges, and mid-career

adults about to seek training prior to re-entering the labor market. Such programs should be brief (4 to 6 weeks), intensive, and should not hamper the ability of the post-secondary institution to provide skill training once a specific occupational field has been chosen. For four year colleges, career exploration programs should help students better understand the occupational consequences of different courses of study. The FY 1977 programs will test these hypotheses.

4. References

(1) Jerome Karabel, "Community Colleges and Social Stratification." Harvard Educational Review, Vol. 42, no. 4; November 1972, 531-562; Wellford Wilms, The Effectiveness of Public and Proprietory Training (October 1974), NIE-G-00-3-0204; and Lew Solomon, The Utilization of Post Secondary Education in Careers (NIE-G-74-0091). Solomon's analyses suggest that four year college graduates are finding their college experiences only remotely relevant to occupational requirements and that disparity is disquieting to the students and to college administrators.

STRATEGY PACKAGE 7: UNDERSTANDING WHAT SKILLS PEOPLE REQUIRE TO BE PREPARED FOR WORK WHEN MOBILITY RATHER THAN OCCUPATIONAL STABILITY IS TYPICAL

1. The problem

People generally agree that training someone only in the specific skills needed for a single job is preparation for work. There is also general agreement that teaching someone only how to think would be poor preparation for work.[1] A third point of agreement is that mobility, rather than stability, characterizes labor force experience. Over 24% of the people in the labor force in a five year period, for example, are employed in a different occupation than they held at the beginning of the period. Currently, the average adult can expect to change occupations about four times during an average working life. This rate of change is projected to increase due to technological and economic shifts. At the same time, the number of jobs requiring advanced training is predicted to decrease, which suggests that in the future horizontal mobility across a fairly wide range of occupations rather than vertical mobility or progression upward may be typical.[2]

Under these conditions, the meaning of being "prepared for a career" is unclear. Where preparation for careers has been resisted as a goal of education, what is often meant by "preparation" is narrow, job-specific (and often "dead-end") training. Alternative sets of educational objectives are needed which may define career preparation at the secondary and post-secondary levels more constructively.

For example:

- what skills should be possessed to most decrease the likelihood of unemployment or expand the career options of a student completing his or her education with a high school degree?

- what skills and abilities should be possessed to most expand the career options of liberal arts college graduates affected by underemployment?

- what kind of training, added to the present curriculum, would most improve mobility for engineering graduates whose skills seem particularly susceptible to technological changes and social shifts?

- what additional skill acquisition, in addition to their regular program, should be considered by young people enrolled in such fields as education and astronomy (predicted to be

oversupplied in the future) to better the chances for a satisfying job if they cannot find employment in the field for which they were trained?

- What should the schools teach to constitute preparation for a career, rather than a specific job?

2. Recent history

Examination of occupational characteristics to specify what would constitute adequate vocational preparation for specific occupations has received considerable Federal support through the Vocational Education Act. Job analysis and occupational clustering schemes have been used in vocational curriculum development for mobility within an occupational cluster as well as for providing job entry skills.

Concern for career ladders and expanding the supply of manpower to meet national needs in critical areas has led to Federal support of occupational and educational analysis in a few fields. In anticipation of Federal legislation likely to expand child care programs rapidly and substantially, for example, the Child Development Associate program (funded by the Office of Child Development) has studied skills, information and attitudes transferrable up a career ladder and has identified new skills required for each rung. This program has linked competency-based certification and training components so that a person can enter at a lower rung and through experience and training designed to develop specific skills move upward after demonstrating performance at each rung. The program does not, however, concern itself with projecting what competencies individuals certified at various levels could bring to other or new jobs if the child development associate market suddenly dried up, or how horizontal mobility might be increased with the addition of relatively few training activities.

To NIE's knowledge, no one is studying systematically the question of precisely what schools should teach for occupational preparation, or the related question of how to prepare persons with skills transferable across occupational clusters as well as within an occupation.

3. Proposed FY 77 Activities

a. Short-term policy studies and research examining the implications of present occupational clustering and work analysis schemes for the identification of transferable skills and abilities and the value of alternative conceptual frameworks for educational planning for career preparation.

One policy study will test alternative schemes for classifying occupations using discriminators based on skill requirements of occupations or worker traits (such as data-people-things in the Dictionary of Occupational Titles, worker traits used by AEL, or Holland's attributes.) Wherever possible, these schemes will be tested against available data (e.g., Parnes NLS, Project Talent, and 1970 Census) to identify factors associated with occupational mobility.

Other short-term policy studies will examine (a) the severity of present mismatches between skill preparation and job openings for high school, technical school and college graduates, (b) the extent of the problem of jobs with no qualified applicants in times of unemployment, and the educational requirements of those jobs, (c) why college enrollments are climbing when only 20% of the jobs of the future are projected to require advanced training, and (d) the reasons why some people have little difficulty in horizontal and vertical mobility while others encounter substantial problems in locating additional or better work.

b. A needs survey of transferable skills will be conducted to identify those groups in the population who have or are likely to have an inadequate stock of generalizable skills that facilitate occupational mobility. Work will build on preliminary identification of taxonomies of transferable skills identified during FY 1976. Using analyses of extant data on the topics, recommendations for the collection of additional information to plan needed programs will be prepared.

c. Grants to study and define transferable skills and career preparation in four areas: (a) emerging job fields such as environmental control, (b) chronically undersupplied fields such as office occupations and mechanical repair, (c) expanding job fields such as health service occupations, and (d) economically impacted fields such as liberal arts and teaching. For each of the four fields, a consortium involving professional or occupational associations, education institutions and manpower researchers will be asked to identify (1) what skills and abilities would maximize transferability into the field from other occupations; (2) what skills and abilities already developed could transfer to other occupations; and (3) what additional education would better prepare learners for vertical and horizontal mobility. A contractor will be selected to coordinate the work of the four grantees and with work on specific occupational sectors supported by the Office of Education and the Department of Labor.

d. Conferences on transferable skills, continued from an FY 1976 series, drawing on the emerging desire and need of both business and education leaders to work together to improve the transition

from school to work. The conferences will focus on analyses of key issues such as national and regional policy options for matching individuals with jobs and reducing the waste of skill underutilization, the use of placement rates for the evaluation and rating of secondary school programs, and additional development needed to improve the teaching of those skills which better prepare individuals to cope with changing occupational demand.

3.e A needs survey of transferable skills, to identify those groups in the population who have or are likely to have an inadequate stock of skills (transferable) that facilitate occupational mobility. Work will build on preliminary identification of taxonomies of transferable skills (in FY 1976) and analyses of extant data on the topics, and result in recommendations for the collection of additional information to plan needed programs.

4. References

(1) As the Bell/Goldwin exchange cited in footnote 12 of Part II suggests, "generally" doesn't mean everyone. Some advocate complete merging of vocational and academic education to equip all those leaving school with at least one immediately salable skill. Others fear vocationalization of education and assert that the critical, analytic mind and humanistic perspective associated with liberal arts education are the most widely salable of skills, now and forever more.

(2) See, for example, James O'Toole, "The reserve army of the underemployed", Change, May 1975, pp 26-33.

STRATEGY PACKAGE 8: STUDY OF RESPONSIBILITY AND FEASIBILITY OF COORDINATED PLANNING FOR CAREER PREPARATION

1. The problem

Coordinated planning by labor unions, industry, educators and manpower planners across secondary and postsecondary, and private and public institutions is believed to be essential for providing effective career preparation. National reports and surveys have consistently indicated that one reason why career preparation for graduates of high schools and postsecondary institutes is inadequate is that better planning across typically isolated and uncoordinated sectors is needed.

Such a recommendation is scarcely new. What is uncertain is who should do this planning, how to bring the right groups together, what precise functions and responsibilities should be fulfilled, and what resources should be coordinated. Many people believe that coordinated planning is a local problem and should be undertaken by local councils.[1] On the other hand, current planning takes place typically at the national, state or regional levels, more than at the local level. Such planning councils, in addition, often have been limited to planning for vocational preparation, particularly disadvantaged adults, or unemployed youth, and have not included planning for career preparation of college bound students, students not enrolled in vocational education programs, or in many instances, for the adult learner and the student enrolled in community colleges, proprietary institutions and four year colleges. Coordination with the wide range of training sponsored by business, industry and the government is scarce.

In addition, organizational constraints to coordinated planning are often severe and incentives for coordination relatively few. By law, most curriculum and operational planning for secondary school general and academic curricula must meet state standards within the decisions of locally-elected Boards of Education. Community colleges and local institutions of higher learning operate under different governance systems, usually responsible to Boards of Trustees (for private organizations) and to state boards of higher education and/or state boards for community colleges. These bodies may not be directly responsible to other public post-secondary governance and planning systems. Manpower training programs operated through the Department of Labor or Social Rehabilitation Services typically report through their state or regional agency authorities and coordination of long-term planning with other education institutions is limited. What has been said about planning for curriculum applies to other educational components affecting the relation between education and work, particularly counseling and placement.

It is not surprising that at a national conference of career educators and vocational educators, one of the highest priorities was "show us at least one place where coordinated planning works."

2. Recent history

There are examples of state and regional coordinated planning for vocational education which can provide some guidance and organizational structures, responsibilities and effectiveness. Regionalized planning councils for vocational and technical education in New York State, for example, offer one approach. Some states have implemented broad K-12 planning for career education that might be extended to secondary and postsecondary institutions. Parent Advisory Councils that are part of many compensatory education programs probably have some lessons to teach on ways in which an advisory body other than the Board of Education can legally and effectively be used by the schools. There are other instances (for example, NIE's EBCE models, the Skyline Center in Dallas, Texas and Project 70 in California) where the business and labor community have become partners in public education. The Department of Labor local planning for CETA is still another approach. Planning in these latter entities, however, often is focused on use of public employment funds or constrained by jurisdictional boundaries and limited program funding.

Recommendations to establish or improve the operation of industry, labor and educational advisory groups appear widely: in the GAO report on vocational education, in Project Baseline reports, in reports on career education by such groups as the National Chamber of Commerce, in the reports of the commissions on the reform of secondary and postsecondary education, in policy analyses of provision of life-long learning, and in studies of how to improve the transition from youth to adulthood.

Except for one study funded by the Institute in FY 1974 and completed in FY 1975 by the College Entrance Examination Board (CEEB) and Project Baseline reports, there have been few surveys of the linkage between a variety of education providers and education "consumers". Little is known about what organizational models have been tried out for coordinated planning and what, on the basis of available data, seem to be their success and failures. To foster better career preparation, as well as access to work and to education for using or obtaining skills needed for work, the CEEB study recommended testing several variations of a model for local coordinated planning and comparing the characteristics of these models with the "natural laboratory" of state and regional planning programs.

3. Projected FY 77 Activities

a. Operation of four pilot community councils selected from eight communities awarded design grants in FY 1976. Awards will be made to consortia of LEA's, the private sector (business, labor, and community representatives), and government agencies. Each of those eight communities will design a council structure with one of two broad functions--(1) collaborative planning and review of existing local resources, aimed at better use of existing resources, and (2) delivery of services directly through such a council structure to augment local programs or provide needed local alternative programs. As well, each community will develop problem analyses and program plans for work in one of four domains of activity: improving credentialling of transferable skills for individuals in formal and nonformal training; reviewing and improving delivery of career preparation in course offerings at the secondary and post-secondary level; helping persons match themselves with work through competency assessment, guidance, counseling and placement services; and improving the employer-stated specification of educational requirements for work and planning job redesign for persons under-employed. At the end of FY 1976, each consortium will have produced a council structure, operating procedures, problem analysis, and program plan for its locale.

   In FY 1977, each of the four pilot sites will receive funds to supplement planning and operation of coordinated planning and special services needed in one or more of the four program areas above. In FY 1978 and FY 1979, support will be reduced by 50% each year.

b. Evaluation of state and regional planning approaches identified in the FY 1975-1976 planning studies and of the community council "consortium" approach, to inform decison-makers of the costs, feasibility and effectiveness of the different organization models in improving planning for and delivery of career preparation services.

4. Relationship of proposed activities to completed or ongoing work

   The FY 74 CEEP project studied (a) the nature and quality of major elements and components of career education programs at the state and local level, (b) the linkages needed to insure these elements and components are integrated, and (c) how to achieve effective K-12 career education coordination. On the basis of workshops, conferences, surveys and policy analysis of alternatives, the study recommended ways NIE could provide high-quality information to practitioners on how to strengthen their career education linkages. Study recommendations are the basis for guidelines for the FY 1976 awards for pilot community councils.

STRATEGY PACKAGE 9: STUDY AND IMPROVE CERTIFICATION OF OCCUPATIONAL COMPETENCIES AFTER GRIGGS

1. The problem

The judicial history of the Griggs v. Duke Power Company and related court decisions is testimony to the limitations of presently available ways of assessing competencies essential to adequate or superior performance on a job. The Griggs and related decisions have ruled that tests or other devices cannot be used to select employees where the result of such use is discriminatory and where the relevance of the selection criteria to occupational performance has not been demonstrated. Pending cases include challenges to Civil Service examinations as well as to measures used by certain business and industries. In a second generation of cases, the acceptability of tests designed after Griggs for compliance with the courts is about to be tested.

The implications of Griggs may be far-reaching for education as well as for employment. It may not be long before educational institutions are challenged in court to demonstrate that their certification and preparation for occupations is relevant to employee selection criteria and to occupational performance. Parallel issues exist in education and the private sector where the use of such certification procedures as the District of Columbia Bar Examination and the National Teacher Examination have been alleged to be discriminatory and irrelevant to performance as a lawyer or a teacher.

The Griggs decision raised questions about the measurement of occupational competencies which may encourage more the improvements in test development and measurement. In the meantime, educators and employers seeking to comply with Griggs and related decisions may soon need access to information about available alternatives given the state of the art in occupational competencies assessment.

2. Recent history

While there are several reviews of the Griggs decision and its educational implications,[1] and of assessment practices of employers in hiring decisions,[2] there is no visible Federal activity which brings together what is known about occupational competency assessment or provides assistance to education institutions seeking to comply with Griggs. There has been prior Federal support for research regarding the fairness of college entrance tests and some of this work may be applicable to occupational competency measurement questions.

3. Proposed FY 77 Activities

a. Short-term policy studies of (a) the Federal, state and local role in effecting changes in competency-based and norm-referenced testing programs as a requirement for admission to post-secondary institutions; and (b) the Federal, state and local role in developing legislation to protect consumers of adult education and training programs intended to provide clearly-certified salable skills.

b. Survey of methods used for educational requirement specification and occupational competency assessment by employers and educational institutions as affected by recent court decisions, and the competency assessment techniques being used in a sample of secondary and post-secondary institutions.

c. Research on ways to improve the construction and validation of occupational competency measures for use by educational institutions.

4. References

(1) Sheila Huff, "Credentialling by Test or by Degrees: Title VII of the Civil Rights Act and Griggs v Duke Power Company," Harvard Educational Review, Vol. 44, No. 2, May 1974, pp. 246-269.

(2) Ivar Berg, Education and Jos: The Great Training Robbery, Boston: Beacon Press, 1971.

STRATEGY PACKAGE 10: EFFECTS OF PUBLIC AND PRIVATE SECTOR FINANCIAL ASSISTANCE FOR ADULT CONTINUING EDUCATION ON PARTICIPATION AND COMPLETION RATES.

1. The problem

Life-long learning and recurrent education may be luxury for some, but is a necessity for many, including adults facing job obsolencence, women who must re-enter the labor force as heads of households or to help sustain the family, young adults who have stepped out of school and now find they are unprepared to earn a living. Psychologically, such education may be a necessity for many people with years of productive work before them who would otherwise be trapped in an occupation which no longer fits their interests and abilities.

Studies by the Carnegie Commission, the Commission on Non-Traditional Education, the National Opinion Research Corporation, the Office of Education, and the National Advisory Council on Adult Education, as well as the Kerr report to OECD on life-long learning and the Faure report to UNESCO have all confirmed that millions of adults want to continue their education, many for occupational purposes, but that they are prevented from doing so by a variety of barriers. Of these, lack of money was seen as the greatest barrier. Lack of transportation, child care, money for books and other expenses, and lack of time were also frequently cited.

Some, but not all, of these other barriers are also related to lack of funds. For some adults, the cost of transportation is too high; others could find good child care in their communities if they had the money to pay for such services. Money for books and other expenses such as lab fees can be a direct financial barrier. Lack of released time from employment and the inability to absorb the loss of income that taking leave without pay would mean are also hurdles to face.

2. Recent history

"Pluralism" characterizes the financing of American post-secondary education perhaps better than any other word. The entire post-secondary education enterprise received almost $30 billion in 1971-72 from a multiplicity of sources: local state and federal government; personal savings and philanthropy; voluntary gifts of corporations and foundations; and from the revenue producing activities of the institutions themselves. Of the $30 billion total, almost $6 billion derives from personal savings and represents tuition and fees payments made by students. In addition to this amount, students contributed $4.4 billion which they received as financial aid from various sources. What are these sources of aid? They are predominantly tax-generated: 88% of the $4.4 billion is from federal funds, and 7% is from states. The remaining 5% of financial asssistance was contributed by the private sector.

The Federal government assists post-secondary students primarily through six programs funded through the U. S. Office of Education,* through the "GI Bill" of the Veterans Administration, and through the Social Security Survivors Benefits plan of the Social Security Administration. All of these programs assist students, either directly or through the institution they have chosen. Students who attend less than half-time are excluded from all but the SSIG and the GI Bill programs while full-time attendance is a requirement under the BEOG and Social Security Survivors Benefit Plan. Eligibility for loan programs varies by state; all states require at least part-time enrollment and some require full-time enrollment.

In addition to these major federal programs, 28 states administer financial assistance plans which aid students directly. State aid is usually granted on the basis of need and most often requires full-time enrollment. Almost 740,000 students benefitted in 1973-74 from state-funded programs. Existing state and federal student aid programs serve as a notable precedent for our proposed initiatives.

Lack of money for tuition is particularly severe for part-time students. The American Council on Education reports that although 66 percent of the institutions in a survey charged higher tuition per credit hour to part-time than to full-time students, part-time students are generally not eligible for or able to obtain Federal student aid. Only 15 percent of the states make financial assistance available to any part-time student, and part-time study is not permitted--at any educational level--under the Social Security Survivors Benefits programs. Most adults are part-time students; and most part-time students are adults. Both ways, the restriction on public financial assistance for post-secondary education falls most heavily on the adult population.

In the private sector, employee financial assistance plans usually operate in the following manner: the eligible employee first seeks approval for the intended course(s), presents evidence of having successfully completed the work at an approved institution, and then receives a refund for tuition and sometimes for other education related expenses. While estimates of private sector funds are difficult to obtain, their value as a financing mechanism for employed workers seeking educational and occupational advancement may go as high as $500 million yearly, if fully utilized.

* These are the Basic Educational Opportunity Grant (BEOG), the Supplemental Educational Opportunity Grant (SEOG), the College Work Study Program (CWS), the Subsidized Insured Loan (SIL) and the Direct Student Loan Program (DSL), and the State Student Incentive Grant Program (SSIG).

Despite the apparent plethora of money for post-secondary education, adults are often hard pressed to find sources of direct financial assistance.

Adults seeking part-time education for career development suffer an additional inequality in public support for post-secondary education. Students attending college full-time may deduct such expenses from their income tax, even where the purpose of college attendance is training for a new occupation. Part-time students can only deduct educational expenses required to maintain current occupational skills or expenses required as a condition of present employment. Again, most adults are attending school part-time and most are seeking career development not maintenance of present skills.

Even when financial assistance is available, preliminary study suggests that present conditions or usage are reducing adult participation rates. Industry, for example, has set up plans which provide money for workers to take courses, but at present, less than 5% of these educational monies are being used. In one study, approximately 200 companies with five million eligible employees offered a variety of tuition aid plans. The usage rate was still about 4%. One large company which provides $750 per worker annually for educational activities and had, potentially, $280 million annually available for workers, reports a 4% usage rate. A survey to be conducted in FY 1976 of the utlization of these private sector funds will provide a better understanding of the causes of under-utilization. Among the candidate conditions: requirement of a B average or better before tuition is refunded (which may frighten adults accustomed to educational problems and who feel "rusty" after years away from school); lack of released time for workers with heavy family responsibilities; and discouragement over the slow rate of progress toward a degree at a one-course-a-semester pace.

Where public sector financial aid is available, problems include restriction of the use of funds for tuition assistance when adults may need supplementary money for books and other education-related expenses; pay back times which are too close together and over too short a time for adults who may just be re-entering the labor market and have low incomes; loan maximums per year that require stringing out education a course-a-semester where higher maximum loans or grants might permit a full summer's study or other concentrated programs.

NIE proposes a series of activities to determine the conditions of usage and eligibility of financial assistance for adult post-secondarty education that will increase prticipation and completion rates.

3. Proposed FY 77 Activities

a. State-level financial aid experiment. This experiment will test the hypothesis that decreasing the amount of time necessary to complete a post-secondary education program by increasing the amount of financial aid will increase the participation rate of the adults age 25 to 55 who have completed at least a high school education and seek part-time education for career development. In conducting this experiment, NIE will make available to students a sum of money in the form of a grant or loan which is to be used in conjunction with an existing state plan of financial tuition assistance. Trend comparisons of participation rates will be made in an experimental region as well as with a comparison region which receives only the tuition assistance.

b. State adoption of other approaches. The state-level experiment will provide a test of one financing mechanism. Several approaches to providing support have been sketched out or designed, including various forms of tax credits and deductions for educational expenses, a "human investment fund" to be supported in a number of ways (possibly through unemployment compensation reserves) and community service fellowships now being considered in California. In FY 1976, the Institute will support an analysis and systems recommended for the United States, information about financing mechanisms being tried out in Europe, and suggestions for incremental changes or adaptions of existing financial aid programs that could increase their value for adult learners.

In FY 1977, the Institute will support further analysis and adaption of these approaches by three to four states, who are apparently very seriously interested in expanding their adult education programs. The application may be targeted to certain groups (for example, modification of loan programs to facilitate re-entry of women or utilization by low-income minority group members) or be intended for all adult residents. Further Institute support would be for evaluation of the effectiveness of whatever programs are presented to state legislatures and to report on the modifications and changes in the designs to keep other states abreast of new approaches to financing life-long education.

c. Policy studies on the modification of existing industry-level programs or the design of new financial assistance plans for: (1) employees of small firms which usually do not provide tuition assistance, (2) the self-employed, and (3) professional and technical personnel.

d. Development and testing of changes in existing employee tuition assistance and worker re-training plans to find out how participation can be increased. These studies will be based on a FY 1976 survey of reasons for non-participation in existing plans, and are being developed with the cooperation of AFL/CIO. All Institute funds in FY 1977 will be used for evaluation, since cooperating unions and employers are expected to support recommended changes directly.

e. Dissemination of five years of research, policy studies and development on ways of increasing adult education for career development through conferences and workshops.

4. References

(1) National Commission on the Financing of Post-secondary Education, Financing Post-secondary Education in the United States. (Washington: U. S. Government Printing Office, December 1973).

(2) Committee for Economic Development, The Management and Financing of Colleges. (New York: Committee for Economic Carnegie Commission on Higher Education, Priorities for Action: Final Report of the Carnegie Commission on High Education. (New Jersey: McGraw-Hill Book Company, 1973).

(3) Who Pays? Who Benefits? Who Should Pay? (New Jersey: McGraw-Hill Book Company, 1973).

(4) Tuition, A supplemental statement to the report of the Carnegie Commission on Who Pays? Who Benefits? Who Should Pay? (New Jersey: McGraw-Hill Book Company, 1974).

(5) American Council on Education, Report to the Committee on the Financing of Higher Education for Adult Students. (Washington: American Council on Education, 1974).

(6) Richard Peterson and Abraham Carp, Learning Interest and Experiences on Adult Americans, (Educational Testing Service, 1973).

(7) J. Roger O'Meara, Combatting Knowledge Obsolescence: II. Employee Tuition Aid Plans. (New York: National Industrial Conference Board, 1970).

(8) Edgar Faure, Learning to Be, (Paris, UNESCO, 1972).

(9) Organization for Economic Cooperation and Development, Recurrent Education: A Strategy for Lifelong Learning. (Paris, OECD/CERI, 1973).

FOOTNOTES

1. The Fourth Annual Gallup Poll of Public Attitudes toward Education conducted in September 1972 (Phi Delta Kappan, September 1972, pp. 33-46) concludes that "Americans are practical people who believe firmly that education is the royal road to success in life." When those polled were asked why they wanted their children to get an education, 44% replied, "to get better jobs." Thirty-eight percent answered, "to make more money, achieve financial success." In the 1973 Gallup Poll, adults were asked to rate the importance of schooling "to one's future success." Seventy-six percent replied, "extremely important." Those who indicated their feelings about the importance of education had changed over the years were asked to rate their changing views. The great majority replied their belief in education as a "key to one's success" had been strengthened.

   A national random sample of adults (Paul T. Hill, Public Views on the Objectives of Secondary Education: The Results of a Survey. National Institute of Education, November 1973) found "a strong and consistent preference for job skills above all other outcomes" of a high school education. Virtually all subgroups in the population--married, unmarried; those in high, middle and lower status occupations; those in urban, small town, and rural areas, by sex, age, ethnicity, and region--agreed on the prime importance of job skills.

   It is, however, also true that some educators, labor union officials and others have reservations about placing high priority on education as preparation for work. For example, a survey of 1,020 members of Phi Delta Kappa showed that "develop skills to enter a specific field of work ranked 16th out of 18 goals for education. The same item was ranked first by faculty members at the Univesity of Toledo Community and Technical College. The Fifth Annual Gallup Poll of Public Attitudes toward Education, cited above, also reported that nine of ten of the 1,627 adults surveyed answered in the affirmative to the question, "Should public schools give more emphasis to a study of trades, professions and business to help students decide on their careers." The report concludes, "The message seems quite clear that employability as a goal of education is a major point of contradiction between what society wants and the goals shown by the Phi Delta Kappan and other educators." (Phi Delta Kappan, February 1973, p. 439; Phi Delta Kappan, May 1975 issue on New Paths to Adulthood; Howard R. Bowen, "Eight Misconceptions", Study commission on Undergraduate Education and the Education of Teachers, December 1973, pp. 5-7. For some rejounders to critics, see Kenneth B. Hoyt, "Answering the Critics of Career Education", undated)

2. According to Peter F. Muirhead, then Associate Commissioner of the U. S. Office of Education, "Each year about 2.5 million young people conclude their formal schooling--perhaps by simply dropping out of school or college--with no preparation for job. Added to the loss of potential earning power for dropouts is the financial loss to the nation in terms of costs for education and possible welfare and other social costs. The expenditures for the education of these 2.5 million students have been computed at about $28 billion: about one third of the $85 billion cost of education in 1970-1971." (Peter F. Muirhead, "Federal Initiatives and Career Education," Proceedings of the Conference on Career Education, May 1972, Educational Testing Service.)

3. The Manpower Report of the President stated in 1968 that 56% of all high school graduates receive some form of job guidance or counseling compared to only 22% of high school dropouts. The quality of this counseling is cast into doubt by a recent survey of the career development of 32,000 high school students. The survey found that a although 55% of the 11th graders had "given a lot of thought" about why their first two job choices were right for them, 59% did not know where to begin to prepare for their first choices, 43% were unsure of the amount of education required, and 68% were only fairly sure or were unsure of their career choices. With regard to the basis for their "decisions", 59% or more had never or only once talked with workers in the occupation of their own first choice, had never taken a course related to that career choice, visited local industries, businesses or workplaces related to that choice, attended a career fair, or taken part in a practice or actual job interview. With regard to career planning, 61% believed most persons never change jobs throughout their adult lives and 43% believe unemployment rates are lower for youth than adults.

   The authors concluded, "...student expressed need for help in career planning is in sharp contrast with the amount of help students feel they have received. This discrepancy is reflected in what students have (and more often, haven't) done to prepare for the difficult career decisions they face. Lack of knowledge about the world of work and career planning process also testifies to their need for help. Considered together, we believe these three vantage points for viewing students' career development provide a consistent and dismal picture. If we were speaking of physical development rather than career development, we would describe American youth as hungry, malnourished and physically retarded." (Prediger, Dale J., Roth, John D., and Noeth, Richard J. Nationwide Study of Student Career Development: Summary of Results. American College Testing Program, Report No. 61, November 1973, p. 33.)

Independent verification of the students' self-report comes from two surveys of employers, one conducted by independent evaluators for the Chicago Public School systems and the other by the Manpower Research Council. In the first study, Walberg and Sigler report that "One problem of considerable concern to personnel staffs is counseling in the schools...according to personnel managers, far too few counselors were reaching far too few students resulting in graduates having little knowledge of the world of work. The students are in many cases totally unprepared to move into careers suited to them, for they really have little idea of what careers they might like, what careers they are suited for, or what their chosen career will demand in terms of education, interpersonal relations, appearance and work attitudes." The Manpower Research Council, in a Spring 1972 survey of employers representing firms with over 650,000 workers, report that more and better quality job-related counseling ranked second and much earlier exposure to career opportunities and career guidance ranked fourth among the top five suggestions on how to increase the employability of youth. (Herbert J. Walberg and Jeanne Sigler, "Business views education in Chicago", Phi Delta Kappan, May 1975, pp. 610-612; The Manpower Research Council, The Employability of Youth, Report No. 7, undated).

4. According to Karabel, only 38% of the students enrolled in community colleges complete the course in four years, with 2% still enrolled. About 25 to 35% of all students once enrolled in community colleges transfer to four year colleges although it is not known what proportion of these are drop outs and what percent transfer after completing the two-year degree. In comparison, about 47% of those enrolled in four year colleges complete their course of study in four years with 11% still enrolled. (Jerome Karabel, "Community colleges and social stratification," Harvard Education Review, Vol. 42, No. 4, November 1972, pp. 531-562.)

With regard to preparation, while the number of individuals unemployed because they are unprepared for job openings that are going begging in a community is not known, surveys of functional literacy and basic skills suggest that at least 30% of the population between the ageas of 18 and 35 are unable to function at the eighth grade level apparently required for most jobs in our economy. (Adult Functional Competency: A Report to the Office of Education Dissemination Review Panel. APL Study: University of Texas at Austin, undated; Thomas Sticht et al. Reading for Work, HumRRO, 1975.)

Paradoxically, at the same time that functional illiteracy is apparently a serious problem, so may be over-education for employment. Employers are predicted to raise the minimum

degrees required for work, a response in turn predicted by O'Toole and others to cause widespread job dissatisfaction among the underemployed of the future. Even now, unemployment among college graduates, particularly liberal arts graduates, is rising. It is estimated that about 50% of the June 1975 liberal arts graduates were be unable to find jobs in their fields for which they are trained. The apparent oversupply of teachers in some areas, the undersupply of teachers in specialities such as education for the handicapped and adult education, and the glut/shortage crisis for aerospace engineers and energy resource engineers are among the problems leading many to conclude that the educational system is insufficiently responsive to changes in the labor market and that better projections of the impact of economic changes on human resource requirements are needed. (College Placement Council. A Study of 1974-75 Beginning Offers. Report No. 2, March 1975. Bowen, as noted earlier, and others disagree, however, maintaining that (a) demand/supply are already as self-correcting as they can be in our economy and (b) that the match between supply and demand is the wrong criterion of education.)

5. According to Willard Wirtz, former Secretary of Labor, "There is an increasing sense of the loss and cost in both human and system terms of the failure to provide mid-career educational and retraining opportunities for women who want to move from motherhood's preoccupation to something else, for people who lose their jobs to machines, for those who simply find or decide that there are other things they want to do...and could, if there were a retraining opportunity." (Willard Wirtz, Statement before the Subcommittee on Labor, Health, Education and Welfare of the House Committee on Appropriations, May 16, 1974, p. 7.)

   In 1972, nearly one out of every eight adults participated in adult education, nearly half were in occupational training programs and most paid their own way. The Commission on Non-Traditional Study found, however, that 53% of their national sample of adults, represented 42.3 million would-be learners, cited the cost of education, including tuition and all incidentals, as major barriers to their education. But even where low cost educational opportunities are available, e.g., through community colleges, adults do not take advantage of the opportunities because they are discouraged by the number of years required to complete programs on a part-time basis. Where they have thought seriously of enrolling full-time, they are dissauded by the loss of earned income they would have to forego and their inability to pay for child care and transportation expenses. (The Commission on Non-Traditional Study, Diversity by Design, San Francisco: Jossey-Bass, 1973.)

With regard to midlife career changes, according to a Bureau of Labor Statistics survey of 70 million Americans at work in January 1966, about 5.5 million were in an occupation different from the one they followed in January of 1965. Pascal et al., reviewing these and other data, conclude that there is a "sad irony." The most promising candidates for redirection programs are the least likely to need them and thus to embrace the opportunity...Workers engaged in routinized jobs, especially jobs that entail dealing with data and materials instead of other people...are likely to be the most bored, alienated or dissatisfied with work and to care the most deeply for change--or to be catapulted into change willy-nilly through loss of jobs. At the first glance, such workers appear to be prime candidates for redirection but actually they dread change more than any other group, the moreso if they suffer the additional disadvantage of limited education. They are the least likely to enter novel situations voluntarily, especially ones that require new learning." A similar concern has been expressed by labor union leaders, who find workers fail to enroll in the retraining programs won as a labor benefit in negotiations. (Samuel Saben, "Occupational mobility of employer workers" Monthly Labor Review, June 1967, pp. 31-38. Also, Anthony J. Pascal et al., An Evaluation of Policy-Related Research for Mid-Life Career Redirection: Vol. II--Major Findings, Santa Monica, Cal.: The Rand Corporation, R-1582/2, NSF, February 1975, p. 159.)

6. As one example of these problems, the 1974 President's Economic Report to Congress stated that although the proportion of women in the labor force has increased from 33.9% of all women of working age in 1950 to 43.3% in 1970, the distribution of women in various occupational groups is virtually unchanged. For example, 1.2% of all engineers were women in 1950, and 1.6% were women in 1970. The report concludes that discrimination--either direct or based on cultural distinctions--continues.

   One of the reasons why these apparent inequities and others, such as unequal pay for equal work, continue is direct discrimination which is now prohibited by law but which often must be fought on a case-by-case basis. Evidence is accumulating, however, that self-imposed limitations on occupational choice, aspirations, career commitment and scholastic motivation related to preparation accounts for a substantial part of the continued inequality and subsequent economic risks for women and minorities. (Marilyn Steele, Women in Vocational Education. Flagstaff, Arizona: Project Baseline, October 1974, pp. 1-23; David Gold, Socialization to Occupational Roles, Menlo Park, Calif.: Portola Institute, February 1974; S. Bem and D. Bem, Training the Woman to Know Her Place: The Social Antecedents of Women in the World of Work, Pennsylvania State Department of Education, 1973; Edith Ruina, Women in Science and Technology,

Cambridge, Mass: Massachusetts Institute of Technology, 1974; Louise Vetter, David W. Stockburger, and Christine Brose, Career Guidance Materials: Implications for Women's Career Development, Columbus, Ohio: Center for Vocational Education, Research and Development Series No. 97, June 1974.)

7. As an example, Dornbusch concludes, "...women do less well in mathematics from adolescence through adulthood because (a) they aspire to jobs which they don't think will require mathematics, (b) they are not pressured as much to do well in mathematics, and (c) when they do poorly, they attribute this performance to lack of ability, which in turn discourages effort." (Stanford M. Dornbusch, "To Try or not to Try," Stanford Magazine, Fall/Winter 1974, Vol. 4, No. 2, p. 2.)

8. A survey examining the relation of schooling to future occupations reported data from over 1500 students in middle class, inner city and vocationally oriented schools in California. Students were not turned off from work: for both sexes and every ethnic group, about 90% said that their jobs would be very important or extremely important to their future happiness. When asked to select their most likely future occupations, few could do so with confidence. Almost all checked more than one occupation and these often required totally different educational preparation (underlining added). The occupational aspirations for both men and women were often unrealistic. Dornbusch writes, "It is sad to read that a high school junior 'wan to be dokter. There are many jobs for which educational achievement is a prerequisite and it is unfortunate that some students aspire to jobs they can's spell, like 'arktek' or 'injner'." (Dornbusch, op.cit., p. 2.)

   In another survey of 229 students from 12 high schools across New York, Russell found that the majority of students selected their high school course because "they liked the curriculum" and not on the basis of the kinds of jobs completing this curriculum would enable them to enter. (Donovan Russell, "School programs: the basis of choice" Career Commentary, Cornell Institute for Research and Development in Occupational Education, Vol. III, No. 6, 1974, p. 7.)

9. Westbrook found that only 18% of a sample of 2,500 high school juniors had realistic educational and occupational plans when self-reported interests and abilities were compared with their educational and occupational choices. Over 60% had choices judged as severely unrealistic. (Bert W. Westbrook and Joseph W. Parry-Hill, Jr., The Construction and Validation of a Measure of Occupational Maturity. North Carolina State University, Center for Occupational Education. Technical Paper No. 16, 1973, pp. 16-17.)

10. According to recommendations for Federal educational leadership FY 1977-1980 by the DHEW Regional Directors, "It is unfortunate that our educational system historically lags behind other changes in our socley. In the face of overwhelming evidence that change has occurred, our schools continue to prepare young people for careers which no longer exist or for which there is an overabundance of qualified applicants. We need seriously to re-examine a practice that borders on a fetish of designing our educational programs primarily to respond to the needs of young people who are looking forward to higher education." The regional directors echo a theme sounded by Coleman who concludes schools have failed to socialize young people for the transition from school to work because they have segregated youth from learning experiences that would increase the significance of academic training, permit acquisition of career-related skills, and develop attitudes, values and behaviors consistent with what Hoyt describes as work values: coming to work on time, doing one's best, finishing tasks that are begun, and cooperating with one's fellow workers. (January 2, 1975 memorandum to the Secretary of Health, Education and Welfare; James Coleman, Youth: Transition to Adulthood, Panel on Youth, President's Science Advisory Committee: Washington, D.C., Government Printing Office 1973, #4106-00037; Kenneth Hoyt, "Evaluation of Career Education: Implications for Instruction at the Elementary School Level." Spring 1975, Journal of Career Education.)

    Among others agreeing with this point are members of the U.S. Chamber of Commerce who write, "Especially in the secondary schools, the curriculum is typically not realistic in terms of meeting student career needs. About 76% of students are now graduating from high school and about 76% of all secondary students are enrolled in college preparatory or general curriculum programs. But only 23% of all U.S. secondary school graduates will ever graduate from college. In addition, only 20% of the jobs opening in the 70s will require a four year college degree while close to 80% will require a high school diploma or training beyond high school but less than four years of college. ...Therefore, we need career education to provide students with insight, information and motivation concerning specialized training as well as professional education." (Chamber of Commerce of the United States. Career Eduaction: What It Is and Why We Need It, 1975, p. 6.)

11. According to one observer, "Our credentialling processes often constitute barriers to new career paths, promote the lockstep educational pattern from high school to college, and prevent many including women re-entering the workforce, from pursuing the careers they desire. Educators and employers must continue to seek ways of measuring what a person can do rather than depending on the number of years of school achieved and degrees attainted." (Willard Wirtz, op. cit., p. 8.)

The courts agree: "Title VII of the Civil Rights Act of 1964 and the Equal Employment Opportunity Act of 1972 made it unlawful for an employer to use the results of a test which discriminates because of race, color, religion, sex or national origin. If a group should show an adverse effect based on such a test, the employer had to prove the test was job related. Griggs v. Duke Power Company challenged this principle and the Supreme Court struck down the use of general aptitude tests and a high school diploma requirement for certain jobs." What happens next is still in ferment, although the consequences are likely to include what one author describes as major changes in the enrollment patterns, content and functions of public schools and institutions of higher learning. (Shelia Huff, "Credentialling by Test or by Degrees: Title VII of the Civil Rights Act and Griggs v. Duke Power Company." Harvard Educational Review, Vol. 44, No. 2, May 1974, pp. 246-269.)

12. What is needed to be prepared for a career among the more controversial issues in career education. Bell has written, "Today we in education must recognize that it is also our duty to provide our students with salable skills...to send young men and women into today's world armed only with Aristotle, Freud and Hemingway is like sending a lamb into the lion's den...Many would argue that a student need merely master the basics in liberal arts and humanities to be well on the way to become educated. As I see it, this is far too narrow a view of education...we need to liberalize vocational education and vocationalize liberal education." Goldwin, special consultant to President Ford, disagrees: "What skills are salable? Right now, skills for making automobiles are not highly salable, but they have been for decades and might be again soon...A school that devotes itself totally and unequivocally to salable skills, especially in a time of high unemployment, sending young men and women into the world armed only with a narrow range of skills is sending lambs into the lion's den. Too many people learn only one narrowly defined set of skills in schools trained to fill a position in one well-defined industry and then that industry stops hiring or lays workers off... Skills that are always in demand are those of a mind trained to think and imagine and express itself." (Terrel H. Bell, "Should colleges teach salable skills?" and Robert A. Goldwin, "Rejoinder." Chronicle of Higher Education, "Point of View." See also Sticht et al., Walberg and Sigler, The Manpower Research Council, and Hill, op.cit.)

13. The National Commission on Non-Traditional Study reports that there is a great need for improved guidance and counseling services for adults. They projected that 13 million adults feared they are too old to undertake further study; 13 million lack information on where to take desired coursework; and 4 million more are interested in studying but are uncertain as to

what type of study they require. These data are confirmed by a recent NORC study: a projected 13 million adults want, but have no access to, career counseling. The first two strategies recommended by Pascal et.al. in their study of mid-career redirection are counseling and referral centers and provision of vocational and diagnostic services. (National Commission on Non-Traditional Study, op.cit.; Robert W. Stump, "The need for adult career counseling," in process, 1975; Pascal et.al., op. cit., pp. 173-174.

14. As noted earlier, 53% of the sample of adults interviewed by the Commission on Non-Traditional Study or 42.3 millin would-be learners cited lack of funds as the major barrier to their continued education. Froomkin has recommended policy changes to make loans more suitable to women who wish to finance their post-secondary education. He states, "The objective conditions for repayment of loans are affected by age, family status and the presence of preschool children more dramatically for women than for men....Since a large proportion of female earnings are likely to be devoted to the repayment of a loan of a given amount, it can be argued that special terms are required to make these loans as suitable to women as they are to men." Almost all of Froomkin's data and arguments could apply to minorities who also suffer special disadvantage in repayment of financial support for higher education. (National Commission on Non-Traditional Study, op. cit.; Joseph Froomkin, Study of the Advantages and Disadvantages of Student Loans to Women, Contract No. HEW-OS-74-255, December 1974. See also Carnegie Commission on Higher Education, Who Pays? Who Benefits? Who Should Pay?, New York: McGraw-Hill, 1973, and Pascal et.al., op.cit., pp. 176-178 for a summary of eight major proposals for financial support of education for mid-life career redirection.)

15. While this may seem a truism, it appears unlikely that very high employment rates would necessarily reduce distribution problems in terms of the economic and psychological rewards of employment for minorities and women. It is also unclear to what extent jobs go unfilled even during periods of high unemployment because the labor force is unqualified or have inappropriate work values. In addition, underemployment is increasingly recognized as potentially more of a material loss to society and the individual than unemployment, and the relation of educational changes to this source of economic loss is uncertain, complex and controversial. (Gerald P. Glyde, David L. Snyder and Anthony R. Steinberger, Underemployment: Definition, Causes and Measurement, Pennsylvania State University Institute for Research on Human Resources, January 1975.)

16. The extent to which education represents an improvement in human capital with direct returns in productivity versus a certification of trainability affecting one's place in the

employment queue is among the debated issues in human resources economics. Some writers advocate education which would enable workers to participate more actively in management and thus influence the structure of the labor market and the nature of the workplace. Others recommend more effective socialization to the requirements of the present and probable economy. The values implicit in these theories of the interface between education and the labor market have implications for what youth are informed about or taught through career education and whether the outcomes are primarily better adapted workers or individuals better able to shape the economic systems. These implications are as yet imperfectly examined. (See, for example, Michael A. Carter and Martin Carnoy. Theories of Labor Markets and Worker Productivity, Menlo Park, Calif.; Portola Institute, August 1974.)

17. Belief concerning the impact of education on educational and on economic equality have shifted over the past twenty years. In the early 1950s, concern for constitutional factors associated with social class and ethnicity and belief in the relative stability of the IQ subsided under the influence of studies showing the importance of the early years of life and of changes in IQ (and thus presumably of educability and economic attainment) with changes in the health, nutritional and educational opportunities of young children. During the early 1960s, compensatory and early education were regarded as promising avenues for reducing the correlation between accident of birth and eventual occupational and social status. Later reports by Coleman, Mosteller and Moynihan, Jensen and Jencks et.al. contributed to the presently widespread belief that variations in school quality have marginal effects relative to family background or heredity in reducing social class and ethnic differences in academic achievement. These studies further have been interpreted as indicating that variations in academic achievement and attainment have only marginal effects on changes in the distribution of occupational status and income if family background is taken into account. Reanalyses of these data and new studies are contributing, however, to a revisionist position on whether schools can make a substantial difference in educational attainment and economic equality. Jencks is analyzing new data and the question remains far more open than may generally be realized. (Benjamin Bloom, Stability and Change in Human Characteristics, New York: Wiley and Sons, 1964; John S. Coleman et.al., Equality of Educational Opportunity, Washington: U. S. Government Printing Office, 1966; Frederick Mosteller and Daniel P. Moynihan, On Equality of Educational Opportunity: Papers Deriving from the Harvard University Faculty Seminar on the Coleman Report, New York: Random House, 1972; Christopher Jencks et.al., Inequality: A Reassessment of the Effect of Family and Schooling in America.)

As an example of the revisionist position, the New York Times (November 18, 1973) reported that "...an international study of schools and learning is giving educators a second thought about the growing belief that home background of youngsters is more important to their academic achievement than anything the schools do. In the Intentional Association for the Evaluation of Educational Achievements study, involving 250,000 students and 50,000 teachers in 22 countries, one finding is that home background accounted for 11.5% of the variation in academic achievement on the average and learning conditions accounted for an independent 10% of the variation on the average. School conditions seemed most important when it came to science and foreign languages; home conditions played an important role in reading, literature and civics." (Other sources: Andrew J. Kopan and Herbert J. Walberg, (Eds.), Rethinking Educational Equality, Berkeley, Calif.: McCutchan, 1974.)

18. According to the Vocational Education Act of 1963, the term vocational education means vocational or technical training or retraining to prepare individuals for gainful employment as semi-skilled or skilled workers and technicians or as sub-professionals in recognized occupations, or to prepare individuals for enrollment in advanced technical education programs, excluding programs to prepare individuals for occupations considered professions or requiring baccalaureate degrees. The specific skill training component of career education thus depends on the existence of vocational/technical education for those individuals selecting occupations requiring less than baccalaureate degrees. Manpower training usually refers to special educational programs preparing adults to enter occupations requiring less than higher degrees, particularly remediation of basic skills, development of sound work habits and development of specific, salable skills for adults who are otherwise unemployable. Some manpower training is related to sudden economic or technological changes, such as programs for unemployed aerospace engineers. Most, however, represent remediation for adults of the failure of compulsory education adequately to prepare non-college bound youth for employment. (Kenneth B. Hoyt, Career Education, Vocational Education and Occupational Education: An Approach to Defining Differences, updated; Pascal et.al., op.cit., Chapter 5, William Dunn, Government Sponsored Programs." pp. 87-105.)

19. Insofar as manpower training remediates initial preparation rather than retraining due to sudden economic or technical changes.

20. The concept of career education as a national priority has been endorsed by groups as diverse as the U.S. Chamber of Commerce, the National Advisory Council on Vocational Education, the DHEW Regional Directors, and the Council of Chief State School Officers.

21. Terrel H. Bell and Kenneth B. Hoyt. Career Education, the USOE Perspective. Center for Vocational Education, Ohio State University, Columbus, Ohio. Occasional Paper No. 4, 1974.

22. According to the U. S. Office of Education, the following has occurred primarily at the K-8 level: the quantity of the effort has far exceeded its quality; career education for special groups has not been well met in most places; career education changes have generally not been achieved in teacher education programs; career education programs exist on only a very few college and university campuses; career education in adult education has not yet happened; evidence of the effectiveness of career education programs while generally positive has been largely limited to elementary school settings; of the 5,000 career education programs now in existence, fewer than 1,000 could be considered as minimally comprehensive; and while a great deal of the knowledge required for making career education work exists, much basic research remains to be done. The minimal required for Federal support of a career education effort to remedy these problems in implementation is estimated to be $58 million annually. (Kenneth B. Hoyt, Career Education Legislative Needs, undated.)

    As seen by the National Advisory Council on Vocational Education, "Among the barriers to career education are: most activities in career education have taken place in the elementary school. Little has happened at the high school or community college or university level. Special groups such as the economically disadvantaged, minorities, the mentally and physically handicapped and the gifted and talented have not benefited. Nor has career education dealt with the serious problems of occupational sex-stereotyping that restricts freedom of occupational choice." (National Advisory Council on Vocational Education, "A National Policy on Career Education" Eighth Report, September 1974, pp. 4-5.)

23. A somewhat critical report on the status of vocational/technical education has been prepared by the General Accounting Office, Evaluation of Vocational/Technical Education, 1975. A more favorable perspective is provided by the series of reports from Project Baseline, which is intended to offer policymakers both an objective picture of the present status of vocational education and, through longitudinal comparisons, an assessment of progress in this field.

24. See Karabel, op.cit.

25. Examples from the U. S. Chamber of Commerce, op.cit. See also Career Education: How to Do It, U. S. Office of Education, Office of Career Education, October 1974; David J. Smoker, Career Education, National Association of Secondary School Principals, 1974.

26. See footnotes 24 and 25. The Council of Chief State School Officers has urged the development of strategies designed to assess career education efforts in terms of program, process and product, and urges enactment of a grants program for states for purposes of career education development, implementation, staff preparation or program expansion. The Council points out that at present, career education costs more and urges Federal support for the differential costs of large-scale implementation of career education. (Status and Recommendations on Career Education, resolution passed by the Council of Chief State School Officers, June 13, 1974.)

27. The FY 1975 Career Education Program Plan, National Institute of Education, provides abstracts of all programs and research funded in FY 1974. Many of these studies are now completed and the products are being disseminated. An upcoming planner's guidebook will summarize the implications of these projects.

28. Since July 1973, the Career Education Program has systematically met with local educators, chief state school officers, representatives of organizations such as the American Personnel and Guidance Association and the American Association of Junior Colleges, the 4-H Clubs of America, the Boy Scouts Explorer Programs, the AFL/CIO and others concerned with the relation of education and work. A three day meeting reviewing proposed FY 1976 career education R&D priorities was held in February 1974 and contact is maintained with many of the participants. The most recent survey of priorities for career education R&D was made at the National Career Education Forum at Ohio State University in March 1975. NIE also consults regularly with the Office of Education and the Fund for the Improvement of Post Secondary Education. The R&D priorities and needs identified in this FY 77 plan reflect directly these recommendations.

29. Kenneth B. Hoyt, "Some Questions and Answers About Career Education," undated, p. 1.

30. See FY 1975 Career Education Program Plan, pp. 1-33 for a problem analysis; see also FY 1976 career education decision packages for further documentation of these barriers. Due to limited resources the FY 1976 National Institute of Education budget and other considerations, only two of the six recommended strategies could be funded.

31. Source: A Reference Guide, Goals and Performance Indicators, Michigan Career Development Program, Michigan Department of Education, 1973.

32. U. S. Chamber of Commerce, op.cit., p. 4.

33. See Hoyt, op.cit

PROJECT ABSTRACTS

EVALUATION OF THE MOUNTAIN-PLAINS EDUCATION AND ECONOMIC DEVELOPMENT PROGRAM, INC.

Principal Investigator: Richard L. Bale
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More than two million rural families with incomes below the poverty level would qualify for a Mountain-Plains approach to family-centered life preparation. This two-year external program evaluation has three distinct elements. Part I is a followup study of those families who complete the Mountain-Plains program as compared with those families who leave the program early, and with a comparison group of families who met entry requirements for the program but were not admitted. ABT has conducted some 1,000 interviews with families at intervals of 6, 12, 18 and 24 months, depending on when they left Glasgow.

Part II of this study asks the question: "If a Mountain-Plains-type program were available anywhere in the country, how many families with backgrounds similar to those presently admitted to Mountain-Plains would be eligible?" Criteria used in making this estimate are families with heads of household (chief breadwinner) aged 18-49, who are physically and mentally able to work, who have at least a primary education, whose income is not more than 1.5 times the official poverty level and who reside in a rural area.

Results indicate a largely forgotten population in America might enroll if a Mountain-Plains program were available in their region. About 2.3 million families representing some 11 million individuals met the above criteria using 1970 census data. Women are the head of household in 23 percent of the family units.

About 62 percent of all heads of household have completed high school, while only 20 percent reported an 8th grade education or less. Their average total income was $3,800 in 1970. The study notes that, contrary to popular opinion, this population is not "lazy, indolent and taking a free ride on the welfare rolls." They have a larger percentage of family heads working than the national average--and often over 40 hours a week at that.

Part III of the study--also still in progress--is an examination of four programs similiar to Mountain-Plains to see how costs and services can be compared.

PRODUCTS AVAILABLE: Due early 1977. Volume I of the final report, Family Centered Residential Career - Education and the Rural Poor: A National Needs Assissment: The Nature and Size of the Potential Client Population, is now available from Abt Associates.

Contract No.: NIE-C-74-0147 Funding: $785,128.

LEARNING RESOURCE ACTIVITIES: A TEACHER'S GUIDE

Principal Investigator: Peter Finn
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Most busy teachers look for practical, effective classroom activity guides they can get their teeth into. It is precisely that kind of teaching aid they'll find in this three-volume set.

Each guide outlines lesson plans which incorporate career education concepts while such subjects as mathematics, social studies, English, science, health and the arts are being taught. The plans tie in the "Occupational Focus" with the "English Relevance," for example, and specify objectives for students. Materials needed, suggested reading lists and discussions of issues which can be raised during the class activity are identified, but they serve as guidelides--not the rigid, inflexible programs that frequently "turn off" creative teachers.

Another feature of this publication is the way in which the use of free and inexpensive materials and community resources are blended with in-school projects. Resource lists identify companies, trade associations and professional societies which can provide supplemental materials and information. These all enhance the hands-on approach suggested here.

Since most activities included grew out of local career education efforts, the guides have a "teachers sharing with teachers" flavor which results in a down-to-earth style, easy-to-use format, and usually no extra purchases are required to carry out the plans.

These volumes are now available from ABT Associates, Inc., who solicit teachers' comments about the value of the guides.

PRODUCT AVAILABLE: Career Education Activities for Subject Area Teachers (Grades 1-6, 6-9, 9-12). Contact the developer for further information.

Contract No.: NIE-C-74-0129 Funding: $56,898.

CASE STUDIES AND ANNOTATED LISTINGS

Principal Investigator: Kathryn D. Hewett
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What are some of the nation's best examples of career education? Here are two books which can provide profiles of how communities are trying to help people deal with career decisions.

Career Education Catalog supplies an annotated listing in three categories--Comprehensive Public School, Supplemental Public School and Alternative and Community Based--of over 85 local, regional and state career education projects around the country. The brief descriptions include program highlights, rounded-off budget amounts, and the names and addresses of program officials who can answer questions.

Diversity is the best way to describe these projects. The Catalog points out creative ways in which local school people present career education concepts in a manner appropriate in the communities they serve.

A companion book, Eleven Career Education Programs, puts the spotlight on the selected, diverse and innovative programs for an in-depth look at each one. While no evaluation was intended, the authors described the programs as they encountered them during the site visits. With the help of each project's staff, the problems, solutions and successes were detailed.

Most of the career education efforts chronicled are aimed at elementary or high school youngsters, with two notable exceptions. The Minnesota Metropolitan State College is an alternative college whose students average 33 years of age and who pursue competency-based B.A. degrees on a part-time basis while working, raising children, enjoying retirement or whatever. Advocates for Women of California's Bay Area focuses on putting women into nontraditional jobs and apprenticeships.

Even though specifics differ, some down-to-earth similarities deserve mention:

- Concerted efforts were made to involve business and community people--as working advisory committees or boards of directors.

- Teachers are the key to successful change and must be involved in planning, design and decision making as well as implementation.

- Students and clients are encouraged to increase their levels of self-awareness as a factor central to making better life and career decisions.

- Staff working in these programs are enthusiastic and committed to making career education succeed, which helps them gain community support and maintain participant interest.

PRODUCTS AVAILABLE: Both books are available from Abt Associates, Inc.

Contract No.: NIE-C-74-0129 Funding: $78,648.

LEARNING KIT FOR GUIDANCE COUNSELORS AND COUNSELOR EDUCATORS TO AID IN THE DELIVERY OF SEX-FAIR COUNSELING

Principal Investigator: Linda Stebbins
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Now that legislation has paved the way for equal opportunity for women and men, counselors must share responsibility for making the laws work. No where is this more crucial than in career guidance.

Abt Associates, Inc., has prepared Sex Fairness in Career Guidance: A Learning Kit to help staff become sensitized to sex bias and learn to eliminate it in career guidance activities with students. The multi-media package can be used for teacher or counselor inservice training or may be self-administered. Since one must be aware of something in order to combat it, Chapter One introduces the "dual role system which limits career and other life choices for both men and women in our society."

Traditional family and work roles for both sexes are discussed. Chapter Two sets out a sex-fair guidance program, recommending specific activities and materials counselors can use to help persons examine attitudes and values with respect to sexual stereotypes and how those influence career options. Group and individual counseling sessions are suggested as well as supplemental resource material.

Since sex bias in career interest inventories is hard to recognize, Chapter Three trains counselors to identify and combat it in administering, reporting and interpreting interest measurements. This section also interprets NIE's guidelines for assessing career interest inventories. An annotated listing and resource guide comprises Chapter Four. Agencies and organizations which can help counselors on the firing line are identified. Scenario cards for role playing, a tape cassette of simulated counseling situations, spirit masters for use with clients and transcripts of counselor-client interactions round out this valuable kit.

School counselors, adult educators and private industry personnel people will find this kit useful on a day-to-day basis.

PRODUCTS AVAILABLE: Sex Fairness in Career Guidance kit. Contact Abt Associates for availability.

Contract No.: NIE-C-74-0141 Funding: $63,843.

FIELD TEST AND REVISION OF COMPREHENSIVE CAREER EDUCATION MODULES

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Based on teacher, school and publisher surveys, career education materials should be inexpensive, easy to use and geared to what's already happening in American classrooms.

By and large, teachers want lesson plans and units that are short, simple to prepare, easy to give students for independent study and visually appealing to everyone. Professional educators don't want to be told they must do something in a particular way and are concerned that career education fit in with the school district's instructional mission.

While its charge was to field test and revise the bulk of curriculum units originally developed as part of the Comprehensive Career Education Model, American Institutes for Research is quick to point out that like the other 29 units* the guides are not designed to be the final answer. But for school districts considering career education, they should help point the way for gradual K-12 career education infusion.

As part of its study, AIR discovered that most school systems will at best be able to budget only about $10-12 per classroom per year for career education materials. They found that teachers like handbooks which include reproducible materials and which given them flexibility in classroom adaptation. Administrators are concerned about how much training of teachers will be required if career education is to be easily infused into existing curriculum. Both groups like publications that are short and to the point with good organization and graphics.

As a result of their field test--involving over 8,000 students and their 527 teachers in 31 school districts in 17 states--AIR staff revised the 61 units it tested into some 130 modules for grades K-12. Lessons were rearranged, alternative learning activities were suggest, cost reductions were made and

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*The other 29 units are presently available from the Center for Vocational Education (CVE). Over 100 units spanning all grade levels and subject areas were originally developed by CVE and the six cooperating school systems. About 60 were transferred to AIR for revision and testing.

overall visual appeal was improved. The language in student materials was also simplified and reading levels reduced thanks to suggestions by curriculum experts. Topical areas like "Understanding and Directing Self-Development," Responsibilities as a Worker and Citizen" and "Personal Planning and Goal Pursuit" are covered.

Discussions with potential publishers are being conducted.

PRODUCTS AVAILABLE: Contact AIR for status of modules.

Contract No.: NIE-C-74-0142 Funding: $960,441.

MAKING A CHOICE: UNDERSTANDING CAREER DECISION MAKING

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"What do you want to be when you grow up?" For a five-year old that's easy--"I wanna be a police officer." After childhood, choosing a career can be a lot harder and seem like a confusing, risky business.

Many careers are found accidentally--because of a person's own abilities, chance remarks by friends, successful or unsuccessful learning experiences, good or bad work habits. But, says the American Institute for Research, people can learn to control and shape the forces that affect their career choices.

In an effort to understand more about career decision making, the AIR study proposes a new social learning theory. Simply stated, it points out the crucial importance of positive and negative reinforcement on an individual's occupational and educational preferences, and notes, in part, the significance of:

- student involvement in work activities where adults holding that job provide positive reinforcement;
- encouragement by family, peers and educators for involvement in occupational activities;
- access to valued adult models working in certain occupations;
- hearing positive or negative words related to given careers.

Another purpose of this study was to decide the kind of intervention programs that can make a difference in career decision making. A search of the literature and a critical review by experts in psychology, sociology, economics, guidance and education yielded the following recommendations:

- Achieve a better balance between the number of trained workers in each occupation and the number of job opportunities, and use incentives such as scholarships to encourage students to enter promising career fields.

- Make future employment projections really available and usable through media presentations, skill-development programs, games and simulations.

- Help adults and youth become skilled career decision makers by developing programs in which they can learn and practice effective decision-making skills.

- Provide information and experiences that help students really know what careers "feel" like and help them overcome limited aspirations.

In addition, the study points out a number of areas in which further research is needed to find out how young people can be exposed to more career alternatives and how they can receive more decision-making help in school:

- If people are attracted to careers that they associate with positive reinforcement, how can learning be structured so that students--particularly women and minorities--experience such reinforcement?

- How do parents, friends and relatives influence career decisions?

- What environmental factors affect a person's career choices and which of those factors can be controlled to the benefit of the individual?

- Do laws, licensing practices and union rules prevent some people from preparing for certain careers?

- Is training and job information inadequate? What can be done about this?

- Do schools limit career options unnecessarily through tracking, counseling and testing practices?

- How can students be exposed to a number of career decision-making patterns so that they can choose those that fit their own particular styles? What factors ensure job satisfaction and success and how can this information be put to good use?

The study advocates research on all of these questions. In addition, it suggests that NIE establish a clearinghouse

where information about career decision making can be stored and disseminated to practitioners across the country.

PRODUCTS AVAILABLE: A Social Learning Theory of Career Decision Making (Final Report in ERIC). "Applications of a Social Learning Theory of Career Selection." Focus on Guidance, November 1975. Counseling Psychologist, Vol. 6, No. 3

Contract No.: NIE-C-74-0134 Funding: $136,700.

CAREER DECISION-MAKING PROGRAM

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Sorting out the information that goes into making career choices can be a confusing process for young people and adults. To make that process a little easier, the Career Decision-Making Program (CD-M) is showing staff and students how they can relate personal characteristics and school subjects to the wider world of work.

"I am not absolutely certain I want to become a buyer but at least I learned to ask the proper questions about myself and an occupation I'd like to enter," said one students at a CD-M field test site. "For the first time in my schooling to date," said another, "I was learning something about what I wanted to be."

For students they key to the program is a Career Information System based on the widely-used Dictionary of Occupational Titles. And for school staff trying to build a comprehensive career education program, CD-M has developed 15 career guidance units for the secondary level that will help all students explore career options and practice decision-making skills. Students are taught the process of gathering, evaluating and using information about themselves and the world of work--how to respond to new information as they and their environment change.

The 15 sequential Career Guidance Units focus on student activities designed to meet program objectives in a group guidance setting. The first four units address the central program concepts of career, self-exploration, occupational exploration and decision making. These units introduce basic exploration and decision-making skills within the framework of career.

Units five through ten use the Career Information System (CIS) to provide experiences in exploration of occupational groups, the DOT Worker Trait Groups (WTGs), and occupations in terms of personal characteristics. In units 11 through 13, students examine major social, environmental and economic influences on career. The final two units help students utilize exploration and decision-making skills in developing or clarifying career plans, including tentative occupational choices.

The Career Guidance Units consist of a counselor/teacher utilization guide, filmstrips and student materials. The staff guide contains detailed lesson plans for each unit. Filmstrips are used as one means of introducing the basic concepts of the units. Student materials--featuring worksheets, test materials, simulation and gaming activities--are designed to accommodate students at varying levels of experience and concept development, using a variety of classroom activities.

The units can be used on a year-long, semester or six- to eight-week basis depending on purposes and additional activities such as field trips.

CIS can also be used with other career education programs. It accommodates a wide range of resources--occupational briefs, bound occupational information, audiovisual materials, VIEW, field trips, classroom experiences, speakers, employer site experiences, simulation, games and so on.

The Worker Trait Group Arrangement of the DOT is used as the basic structure of the CIS. All career information resources that can be linked with occupations or with Worker Trait Groups can be processed into the system. This is accomplished by classifying occupational titles according to their appropriate WTGs and filing and indexing the sources.

The DOT contains three of the most comprehensive occupational classification systems and is one of the most common sources of occupational information. However, it has had limited use in secondary schools because of two major problems: The language has been difficult for young readers and the format has seemed complicated. Therefore, in order for the WTGs and other DOT materials to be used successfully, CD-M staff rewrote the information at the eighth grade reading level using a simpler format.

The system can be entered from various starting points. Students can find career information based on their interests and other personal characteristics, thus providing tailor-made career exploration. The system also provides a means for group orientation and exploration activities which can be conducted through school subjects or as part of a group guidance program.

CIS materials consist of basic guides, indices and supplementary access materials designed to make the DOT and other governmental and commercial information publications more useful for career exploration. A unique feature of CIS is its open-endedness-it provides a capability for linkage with other systems by indexing the clusters in the existing system to appropriate WTGs.

Field testing of the CD-M program--which has been under development since 1971--included preliminary testing of the CIS at the college level where it was determined the materials could be used for career exploration and decision making. During 1976-77, CD-M program development will continue at the college level.

PRODUCTS AVAILABLE: Contact McKnight Publishing Company, Box 2854, Bloomington, Illinois 61701.

Contract No.: NE-C-00-3-0093 Funding $1,728,887.

EXPERIENCE-BASED CAREER EDUCATION

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Contract No.: NIE-C-00-4-0008
Funding: $3,333,404

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Contract No.: NIE-C-00-4-0009
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Contract No.: NIE-C-00-4-0010
Funding: $3,206,575

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Contract No.: NIE-C-00-4-0011
Funding: $3,602,552

For high school students who want to learn firsthand what it's like to be a job holder in today's complex world, NIE has developed and tested a unique alternative: Experience-Based Career Education (EBCE).

While career exploration is an important feature of the program, the concept has become in most cases synonymous with comprehensive secondary education itself. Youngsters at most EBCE test sites are meeting all the requirements for high school while gaining many of the competencies for eventual job entry, postsecondary education and family responsibilities as well.

EBCE differs from most alternative secondary school programs by balancing academic, personal and vocation development. Using the world of work as a way to tie these three elements together makes EBCE different from vocational programs, too:

- EBCE emphasizes career exploration, with site and job rotation, rather than single work experiences.
- EBCE emphasizes the development of general rather than job-specific career skills.
- EBCE is targeted to all students.
- EBCE learning activities in the community combine vocational learning with academic and personal learning objectives.
- EBCE allows students a major role in shaping their programs in the community.
- EBCE community participants and students are unpaid.

Students, parents, community resource persons and staff in Oakland, California; Tigard, Oregon; Philadelphia, Pennsylvania; and Charleston, West Virginia, proved EBCE could work beginning with the 1972-73 school year. Now, hundreds of graduates later, the idea of students and adults working and learning together outside the traditional school classroom has spread throughout the nation to dozens of school districts, large and small.

What can students in EBCE learn as they spend from one day to three months at various workplaces in a community? Things like:

- learning and applying scientific principles in immunology at a medical laboratory, and in ecology with a naturalist at a state park;
- taking abstractions from textbooks about marketing, weights and measures, consumer rights or supply and demand; and finding out what they mean to butchers, supermarket buyers, advertisers and consumer action agencies;
- learning how to use a slide rule to make quick cost estimates at a printing company, compute board feet at a lumber yard or make equivalents between inches and metrics at an auto mechanic's shop;
- developing writing and interviewing skills with a political journalist while studying city government firsthand.

Evaluation studies conducted by the developers, visits by outside reviewers and an external evaluation conducted by Educational Testing Service have substantiated what students, parents, employers and graduates say: The program helps adolescents make the transition to adulthood in ways that traditional schools usually do not duplicate. Besides meeting regular graduation requirements, EBCE helps students--no matter what their backgrounds or career aspirations--become more self-confident, better able to communicate and relate to adults and better able to manage their own time and learning activities.

EBCE materials and training options are best obtained by contacting the four original developers listed above.

And, since EBCE is being installed in almost every state, interested persons might contact the career education coordinator at their state departments of education for names of demonstration sites in their local areas or regions.

LEGAL ISSUES IN EXPERIENCE-BASED CAREER EDUCATION

Principal Investigator: ARIES CORPORATION
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Will legal headaches face new EBCE programs as they sprout up across the country? Probably nothing major, says this study, but securing good legal counsel at the onset is recommended.

One consideration for new programs is whether to incorporate as a private school. Although doing so has numerous advantages--greater flexibility in staff selection, broader curriculum options--it has at least one drawback. Long-term funding possibilities are bleak, with little change of securing state educational support for the private sector's efforts. Thus public school sponsorship of career education programs still looks like the best way.

Choosing public school sponsorship means facing other issues, however, such as state teacher certification requirements, curriculum standards and attendance regulations. Consideration needs to be given to each of these issues and alternatives found that meet respective state guidelines. Teacher certification surfaces as particularly important. Without having staff either certified or capable of being certified, the respectability of the EBCE program may well be placed in jeopardy.

All work-experience programs face an insurance problem. Both students and employers need protection guarantees against injury and harm. Most of the original EBCE programs purchased additional insurance coverage for students, usually at minimal cost, and incorporated a "hold harmless" clause for the benefit of the employer.

Transportation alternatives also need to be provided by EBCE programs. Most solved it by purchasing bus passes for students or providing staff-driven vehicles to transport students to employer sites.

Finally, all programs have to deal with maintaining the student in a learner rather than an employee status. In all instances this meant that all work performed at the employer site was done without pay.

So legal considerations do exist for the new EBCE program. Most are fairly esaily resolved, but if they are ignored, directors may see minor headaches turn to migraines.

PRODUCT AVAILABLE: Legal Issues in Experience-Based Career Education. Available from ERIC.

Contract No.: OEC-0-72-5240 Funding: $737,587 (including other tasks).

CURRICULUM BUILDING PAPERS

Principal Investigator: ARIES CORPORATION
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If teachers today don't see a crying need for change, chances are that they will not be overly receptive to new developments. But at the same time, curriculum developers must be able to gaze into a crystal ball and predict the problems that will face teachers five or six years from now. If developers concentrate only on what the schools need now, they will be in real danger of preparing obsolete materials.

This series of papers on curriculum building indicates that school curriculum develops in a number of ways. For some it evolves logically with a clear statement of goals and careful attention to specified behavioral objectives. For others, it is an artistic creation and a blend of "great ideas."

Yet crucial to each approach is attention to goals and purposes--a clear statement of the problem that the program hopes to solve: "Curriculum development is mostly the art of making good judgments and decisions made in the first steps of a project can bless or curse a project throughout its duration."

Teamwork is a prerequisite for any worthwhile development, and staff need to integrate all phases of the development process. For example, if they want a better-than-average product, evaluation should begin with the idea itself and continue throughout the entire development. Controlled field testing is also a must.

As for the role of teachers, most curriculum developers agree that teachers must be involved in the building process. If the teacher does not believe the new design to be worthwhile, chances of it being retained are slim indeed. The best curriculum, says one author, allows teachers to pick and choose materials that best fit their priorities and purposes.

Another caution: If there is to be any long-term implementation of new curriculum, it must be funded through regular, ongoing budget categories. If curriculum is totally dependent upon federal funds, then when the money goes, so goes the innovation.

PRODUCTS AVAILABLE: Papers on Curriculum building published in 1974. Available from ERIC.

Contract No.: OEC-0-725240 Funding: $737,587 (including other tasks).

INDIVIDUALIZED INSTRUCTION AND TRACKING IN CAREER EDUCATION

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The concept of individualized instruction has been around since Socrates' students were urged to discover truth for themselves. How the idea works within the context of three major career education programs is the focus of this report.

The Mountain-Plains Rural Residential Program in Montana, Experienced-Based Career Education at Research for Better Schools in Philadelphia, and Appalachia Educational Laboratory in Charleston, West Virginia, share a common goal in assisting individual students to attain self-satisfaction and self-realization through career awareness, career exploration and career specialization. At issue for the program--and for other career education efforts as well--is whether instruction can be personalized sufficiently to help students reach their own goals while at the same time avoid "tracking students into narrowly constrained areas."

Have the three programs succeeded in individualizing instruction? Quite well, apparently. All three projects have systematic procedures for determining on a continual basis the needs, interests and aspirations of their students, and for providing options that help optimize students' growth. Backed up by strong counseling programs, students are offered a wide range of alternatives in both academic and career areas.

So how about criticism that career education may be a form of "tracking" in disguise? In none of these programs did "tracking" appear to exist. Each one used multiple strategies and instruments as a part of its assessment methods. Where a student's basic skills might have been limiting, assessment and remedial activities were continuously available. All students were apprised of all possible choices and these options were no more or less available for special groups than for the majority. In fact, all three of these programs perceived individualizing services as the central way to avoid "tracking." What evidences of "tracking" did surface during the observations of researchers was probably due to factors beyond the control of the projects themselves--factors such as financial constraints and the underlying peer and societal influences that relate to career exploration choices.

Noting that "tracking" has both positive and negative aspects, researchers found no single, precise method for assessing the degree of student "tracking" in programs. They suggest six clues to watch out for:

- the bases on which occupational training areas are selected;
- the extensiveness of student diagnoses;
- the nature of counseling services;
- the accommodation to culturally different values;
- the degree of program "fit" to client needs;
- the importance placed on individual as opposed to societal needs.

PRODUCT AVAILABLE: Individualized Instruction and Tracking in Career Education, June 1974. Available from ERIC.

Contract No.: OEC-0-7Z-5240 Funding: $737,587 (including other tasks).

FIFTEEN YEARS AFTER HIGH SCHOOL--THE IMPACT OF ADOLESCENT SOCIAL SYSTEM ON SUBSEQUENT OCCUPATIONAL ACHIEVEMENT

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The words "high school" conjure up different memories for different people. But how did those high school experiences and friendships affect the lives of people five, ten, or fifteen years later? Temme is seeking the answers to that provocative question by tracking how the adolescent years affect career decisions later on.

Colemen's study of midwestern high school students, Adolescent Society, which began with an original survey in 1957, provides a continuing source of data for this longitudinal effort. Social values and attitudes, educational aspirations, ability, experiences and the high school social structure of the 1957-58 scene were Coleman's key topics. Temme's re-survey is gathering data on subsequent educational, occupational and social experiences which, when completed and analyzed against the original data, will shed considerable light on how those nearly forgotten attitudes and events at 16 shape the life of the 35 year old. Of special interest will be follow-up study reports on career decision-making patterns of women and mid-career development for both men and women.

There are two publications at present. The first, Occupation: Meanings and Measures, has two purposes: 1) to add to systematic knowledge about occupational structure as a feature of society and 2) to develop methods and measures for advancing our understanding of the world of work and how the individual progresses through it--psychologically, socially and economically. The second book, The History and Methodology of the Adolescent Society Follow-Up Study, documents and describes progress to date, as well as specifying procedures, technical problems encountered by researchers and strategies used to overcome them.

Educators--career educationists or not--will be anxiously awaiting more results of this signal study.

PRODUCTS AVAILABLE: Contact principal investigator for availability.

Contract No.: NIE-G-74-0006 Funding: $164,640

ACCEPTABILITY AND NEGOTIABILITY OF EXTERNAL DEGREES

Principal Investigator: THE BUREAU OF SOCIAL SCIENCE RESEARCH
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Washington, D. C. 20036

Since the work of the Commission on Non-traditional Study and various Carnegie Commission studies, much progress has been made in differentiating between non-traditional degree programs and external degrees and in developing external degree typologies. Nevertheless, no one conceptual definition or any one typology has emerged. Therefore, preliminary to this study of graduates, a systematic approach to defining "external degree program" and a typology for the programs so identified will be developed.

Once these issues are resolved, the Bureau of Social Science Research will compile a systematic inventory of external degree programs, including the number of degrees of each type and level granted to date, by each year, the nature of the degree-granting program, whether the degree is considered to be transfer in nature, terminal or both, etc.

Acceptability of degrees, that is the ability of the external degree to "satisfy entrance requirements to subsequent educational programs," will be measured by asking actual program graduates about their experience in applying to higher-level academic programs.

Negotiability of degrees, that is the utility of external degrees "in changing one's position in the world of work," will be measured through a survey of degree recipients and employers.

A consultant panel of experts from the research community and from organizations with responsibility for linkages between education and work will help refine the central concepts addressed in this study and review the survey methodology.

The final report will be presented at an Invitational Seminar for administrators of external degree programs and other concerned officials. The American Council on Education has responsibility for the dissemination of the report and will continue this effort after the contract's expiration.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-400-76-0098 Funding: $140,175.

RECOMMENDATIONS TO ACHIEVE OCCUPATIONAL AND EDUCATIONAL EQUITY FOR WOMEN IN SCHOOL DISTRICTS

Principal Investigator: Doris Timpano
CAREER WOMEN IN EDUCATION
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Where are the women principals and superintendents in our elementary and high schools? If New York State is representative of the rest of the country, women educators aren't visible because they aren't being hired.

In fact, the situation for women educators is getting worse instead of better. Women principals in New York State have declined by over 50 percent in the past 17 years; outside New York City only 14 percent of the elementary schools and less than one percent of the high schools have women principals.

These statistics have grave implications for students, says this report. Few students are having a chance to view women as leaders. Without these role models, the system provides little encouragement for young women to be anything but teachers and secretaries.

For women seeking administrative posts, the statistics are equally serious. Women administrators can't find jobs. To combat this, the Long Island Council for Women Administrators in Education organized a "grassroots" process to change discriminatory hiring practices. The Council's aim--to provide qualified women with equal opportunities in educational administration--included this plan of attack:

- Disrupt the "buddy system" of hiring by developing a communication system of monitors in each district who report administrative vacancies to Council headquarters. Potential women candidates are then immediately contacted and urged to apply.
- Record district recruitment and selection practices and issue reports such as "Practices which Prevent Women from Securing Administrative Positions."
- Offer career development programs for encouraging upward mobility.

- Inform school administrators through direct contact and research studies of discrimination in their district and request their cooperation in announcing vacancies to women applicants and interviewing and hiring women as administrators.

Have these tactics been successful? Although it is too soon to see a sudden increase in women administrators, there have been some successes. Qualified women are now receiving notice of 50 percent more job openings through the Council's network. Many more women are being interviewed for openings than ever before. Administrators, aware that their policies are being monitored, are more attentive to compliance regulations. And women have learned that teamwork on the "grassroots" level works in combating subtle discrimination in hiring practices.

But more remains to be done, states the Council. Some teeth need to be put into present state and federal compliance mechanisms. Districts have to be made accountable for discrimination against women in administration. Less talk and more action is called for if employment equity for women in education will ever be more than a promise.

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 3: Sex Discrimination in the Selection of School District Administrators: What Can Be Done?, 1976. Contact NIE for availability.

Contract No.: NIE-P-76-0001 Funding: $2,000.

LEGAL CONSTRAINTS TO EXTERNAL HIGHER EDUCATION DEGREE PROGRAM

Principal Investigator: William Kaplin
Columbia School of Law
CATHOLIC UNIVERSITY OF AMERICA
Washington, D. C. 20017

When college reformers propose changes such as granting credit for self-taught skills and wisdom acquired through experience, quality control may be at stake.

This project identifies the legal and regulatory issues created by the rapid growth of nontraditional studies and external degree programs. It recommends alternatives which would support experimentation and growth while assuring quality and legitimacy.

The authors describe what is happening to traditional institutions of higher education as a basis for understanding the external degree movement. They argue that the external degree movement is not merely an extension of earlier adult education efforts, but that it represents deep dissatisfaction with present day higher education, which foreshadows fundamental changes in the delivery of higher education in the future.

Their discussion provides information on both governmental and private accreditations' responses to nontraditional studies and an analysis of the constitutional issues which such responses may raise. An analysis of existing chartering and licensing laws in postsecondary education is also included.

PRODUCT AVAILABLE: Legal and Other Constraints to the Development of External Degree Programs, 2 volumes, 473 pp. Available from ERIC (No. HE006323).

Contract No.: NE-G-00-3-0208 Funding: $38,390.

EDUCATIONAL REQUIREMENTS FOR THE PUBLIC SECTOR

Principal Investigators: Laura Best, Martin Carnoy,
Russell Rumberger
CENTER FOR ECONOMIC STUDIES
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Palo Alto, California 94301

Knowing the labor market--the kind of worker being hired and the characteristics of jobs available--provides clues for needed changes in educational requirements.

Focusing on labor market data from 1960-1970, this analysis points to the type (sex, race, income and educational level) of persons being hired, the growth of certain types of jobs, the educational and income levels of workers and the increased importance of public employment.

Government jobs have grown substantially in the last 30 years. They now play an important role in determining the composition of the labor force--particularly for women and minorities. Formerly limited to nonprofessional and menial positions, women and minorities are now finding increased managerial and professional opportunities thanks to government hiring and advancement guidelines.

Other noteworthy facts:

- The public sector rather than the private sector is absorbing a major portion of the hiring of women and minorities, particularly in professional and management positions.
- If trends continue, by 1980 women will comprise 50 percent of the public workforce.
- The growth of professional positions has been particularly rapid in government, and an increasing number of women workers are being hired for these openings.
- Educational requirements for all occupational categories continue to increase except in the employment of young black male professionals. The intense recruitment of blacks has resulted in a drop of approximately one year in the average educational requirement of this group.
- Salaries for young male professionals are on the increase. However, white male public

sector professionals are still paid less than private sector professionals. Women and minorities are paid more in the public than private sector.

For career educators, the message is two-pronged: Help young people recognize career possibilities in government and reassess educational programs in light of growing opportunities for women and minorities.

PRODUCT AVAILABLE: Interim Report 1975. Final Report due in late 1976. Contact author for availability.

Contract No.: NIE-G-74-0078 Funding: $37,314.

EDUCATIONAL REQUIREMENTS FOR INDUSTRIAL DEMOCRACY

Principal Investigator: Henry Levin
CENTER FOR ECONOMIC STUDIES
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Palo Alto, California 94301

If workers will be taking on a bigger role in decision making in the future, schools need to teach those skills for their job relevance--not just because they're part of a basic liberal education.

The work environment is in a process of change. Tensions and dissatisfactions among workers have begun to reduce sharply the quality and quantity of goods and potentially threaten the stability of the economy. This increasing worker unrest is an indication of growing anger at the lack of "quality" work environments.

Sharp reductions in the goods produced is but a symptom of another complex problem: Overeducation. Some workers are simply overqualified for their jobs and unrest results. Creative and satisfying jobs are few and far between. To get around these barriers to productivity, forward-thinking employers are trying two work reforms in the name of industrial democracy: (1) increased individualization of work responsibility and (2) greater employee participation and cooperation.

Innovations companies are trying include redesign of jobs, work teams, worker choice on work schedules, choice of job assignments, job rotation and other personal incentives to increase substantially the degree of worker participation in decision making.

Interestingly enough, many of these reforms are similar to innovations that some schools already use: Individualized instruction, open schools, team teaching, alternative schools and differentiated staffing. As young people experience these kinds of options during formal education, they may be anticipating similar reforms in the workplace. Determining which of these best meets the requirements for workers in a democratized environment will be the focus for the next stage of this study.

Still, the study says, the majority of young workers today are not prepared for the changes which are in store for them. If managers begin to require increased self-initiative, less specialization, greater cooperation and shared participation, the foundations must be laid now.

PTODUCTS AVAILABLE: 18 Month Report: Educational Requirements for Industrial Democracy. "Sex Role Socialization and Work Roles: The Experience of Women" (Discussion Paper 74-1); "Socialization to Occupational Roles" (Discussion Paper 74-2); "The Transformation of Adulthood: Its Implications for Youth" (Discussion Paper 74-3). These and other related papers are available from the Center for Economic Studies and from ERIC.

Contract No.: NE-G-00-3-0205 Funding: $158,941.

ESTABLISHING DIRECTIONS AND PRIORITIES FOR SCHOOL-BASED CAREER EDUCATION

Principal Investigator: Joseph Schwab
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Career education seems more vulnerable to criticism than most educational reforms. The reason: It sits astride many fundamental dilemmas of American society--the political ideal of freedom and independence for the individual is not always compatible with the efficiency and productivity demanded by the economy. Since career educators must take a stand on the issues--should the "work ethic" be reinforced or abandoned for instance--they probably will continue to draw the fire of the movement's critics.

But the outlook may not be as bleak as it seems. The authors saw an "underlying consensus" of where career education priorities should be placed, though some practitioners may not agree. Career education should:

- Bring together people and jobs. The importance of work and occupation is gaining greater recognition from scholars and practical people in many fields. If career education helps people make better career decisions, it may contribute greatly to individual and national well-being.

- Develop awareness and capability for adult roles. Young people need to know how to function as adults and be recognized as adults in this society. Career education should help expand student contacts and interactive experiences with adults in a variety of roles including work roles. Young people need ways to "try on" those roles in circumstances where early failures will not be damaging.

- Create diverse routes to publicly-recognized masteries. Modern society demands many talents of its workforce, but schools nurture only a few. These may be in oversupply. "By bringing into school awareness and encouragement of masteries in the world outside school, career education can provide avenues to recognized accomplishment for more students, develop more talents, ease unnecessary competition among students--and--

provide the economy with workers with diverse competencies."

- Enable students to comprehend, cope with and influence the economic-social-political system. If individuals have no conception of the system of which their actions are a part, they cannot act in society's or their own best interest. Youth needs to know how their decisions affect society.

- Assist with the acquisition of the means for self-support. Young people who don't go to college join the workforce, join the unemployed, or become part of a "mysterious and apparently growing body of teenagers who are not employed and who do not look for work." These last groups are often--but not always--public problems as well as personal problems to themselves and their families. If career education helps them learn to support themselves through honest work, it will help meet critical social needs.

What specifics will accomplish all this? While there's no single "right" way of doing things, suggestions include providing training in skills for the range of careers between the low-paying menial tasks and the high-paying professions so 16 and 17 year olds could leave school with the means for honorable self-support. Whether youths would choose to use such skills for income during college, for lifelong self-support or not at all would be the option of the individual.

The second portion of the report suggests guidelines for curriculum development based on "an alternative to bare statement behavioral objectives" intended to help developers and funding agency reviewers alike.

PRODUCT AVAILABLE: Career Education: The State of the Idea and Its Prospects for the Future (with E. W. Eisner and Decker Walker), October 1974. Contact author for availability.

Contract No.: NIE-C-74-0048 Funding: $38,936

NEW ESTIMATES OF THE EFFECTS OF FAMILY BACKGROUND, TEST SCORES, PERSONALITY AND YEARS OF SCHOOLING ON ECONOMIC SUCCESS

Principal Investigators: Christoper Jencks and Lee Rainwater
CENTER FOR THE STUDY OF PUBLIC POLICY
123 Mount Auburn Street
Cambridge, Massachusetts 02138

This project continues the research begun and reported by Jencks and others in Inequality: A Reassessment of the Effect of Family and Schooling in America. Of this book, The American School Board Journal said, "Inequality. . .is likely to have as much effect on American education as anything written in the last 50 years."

In the continuation, Jencks and his collaborator will address the following questions:

1. How large are the overall effects of family background on educational attainment, occupational status and incomes?

2. What specific family characteristics contribute to education and occupational attainment?

3. How does family background influence success in the areas listed in number one above?

4. How much effect do cognitive skills have on education, occupation and income?

5. How do test scores exercise their effect?

6. How much effect do selected personality traits have on subsequent educational attainment and economic success, and how do personality traits exercise their effect?

7. How much does educational attainment affect economic success, and how is this effect exercised?

8. How much effect does individual economic success have on selected measures of overall economic and social consumption or well-being?

These basic questions are central to the goal of improving our understanding of the relationship between education and work.

PRODUCT AVAILABLE: Study in progress.

Contract No.: NIE-G-74-0077 Funding: Joint Funding from NIE--$49,732 and the U.S. Department of Labor's Manpower Administration--$49,732.

SEX-ROLE VALUES IN THE CAREER DECISION-MAKING PROCESS

Principal Investigator: Carol K. Tittle
Institute for Research and Development in Occupational Education
CITY UNIVERSITY OF NEW YORK
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New York, New York 10036

Career education and career decision-making models have typically included two broad areas: (1) knowledge about occupations and education; and (2) values related to occupations. This view of the content of career decision-making has been challenged by data on the occupational segregation of women and the different career patterns found for women and men. It is argued that a third area is necessary for a valid theory of career decision making: values related to sex roles in American culture.

Psathas (1968) has suggested that aspects of the sex role have direct implications for the types of occupations women enter and women's career patterns. The present study is intended to provide a definition of the domain of values related to sex roles and to examine the values held by high school students for important aspects of occupational and sex roles. The project will determine whether there is a set of sex-role related values that can be defined and that individuals can discriminate among. High school students in grade 11 will be individually interviewed to develop and test the set of sex-role related values. Subgroups of the population (groups classified by sex, socio-cultural background, and economic status) will be asked to rank and rate both sex-role related and occupationally related values. Comparisons of the subgroups will show values held in common, as well as the overlap between the value sets. The "product" of the research will be a set of terms, operationally defined, which can be used in further research and also directly applied to the development of new materials and instruments in career education programs. The clarification of values related to both sex roles and occupational roles is a necessary precondition to a valid theory of career decision making for both women and men.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0074 Funding: $132,148

EVALUATION OF THE HOME/COMMUNITY-BASED CAREER EDUCATION PROJECT AND ASSESSMENT OF THE CAREER GUIDANCE AND COUNSELING NEEDS OF ADULTS

Principal Investigator: Solomon Arbeiter
COLLEGE ENTRANCE EXAMINATION BOARD
888 Seventh Avenue
New York, New York 10019

The objective of this follow-up survey is to assess the client-related outcomes of the Home/Community-Based Career Education Project sponsored by the Education Development Center (see abstract below) in Providence, Rhode Island.

A sample of the former clients will be interviewed to determine their level of satisfaction with the counseling services they received, and also to determine what decisions the clients reached and their success in implementing such decisions. Thus, changes in employment status, education and training attainment and changes in earnings will be studied.

The national assessment of career guidance and counseling needs will be performed through a telephone survey. It will seek to determine what proportion of the adult population intends to change jobs or careers and will explore the counseling services considered beneficial in this process of transition. The intent is to ascertain what information and services adults want and will use in finding or changing jobs and to determine the best method for bringing these services to those who need them.

PRODUCT AVAILABLE: In progress.

Contract No.: 400-76-0002 Funding: $107,913.

STATE-LEVEL STUDY IN CAREER EDUCATION

Principal Investigators: Solomon Arbeiter and Richard Ferrin
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"Our schools are preparing students for the world of work," say educators. "But how well?," ask employers.

A four-state survey and detailed literature search by the College Entrance Examination Board indicate that secondary and postsecondary schools are indeed helping students experience the processes used in the work place. But there is still little tie between the skills students leave school with and what employers expect--the requirements of the school and work place are not aligned.

The study points to the need for a better system of linkage between town and gown--a joint effort to develop realistic school exit and job entrance requirements for students as they prepare to cross the bridge between school and work.

How to do this when job requirements shift quickly and dozens of public agencies control accreditation, certification and licensure?

Based on examination of 200 school/work links that now exist in California, Florida, New York and Ohio, the following recommendations were made:

- Establish state-level Career Competency Assessment Boards to develop a common language for education, business, labor and government to use in describing school exit and job entry requirements.
- Give state and local industry/education advisory councils (the most widespread linkage mechanism) more involvement in education program development and evaluation.
- Make the work of local councils more effective by providing state guidelines to follow.
- Develop competency-based licensure and certification procedures for a broad range of career fields.

Just as much responsibility for these changes rests with employers as it does with educators. Yet at present,

linkages operate in only one direction, forcing education to make itself more acceptable to the business world. Some reciprocity on the part of the world of work is long overdue.

The report of the study, available from the College Board, develops a conceptual framework for viewing school and work transitions, and a supplemental report describes in detail the functioning of 20 local, state and regional linkage programs.

PRODUCT AVAILABLE: Bridging the Gap: A Study of Education-to-Work Linkages. Contact CEEB for availability.

Contract No.: NIE-C-74-0146 Funding: $104,385.

EXTENDING THE IMPACT OF BRIDGING THE GAP: A STUDY OF EDUCATION-TO-WORK LINKAGES

Principal Investigator: Solomon Arbeiter
COLLEGE ENTRANCE EXAMINATION BOARD
888 Seventh Avenue
New York, New York 10019

The purpose of this contract is to disseminate the findings of Bridging the Gap: A Study of Education-to-Work Linkages (see the immediately preceding abstract) to policy makers in order to stimulate further action for improvement of education-and-work linkages in all states. A conference will be held to identify areas of action that the participants might undertake collectively, such as: generation of policy statements addressed to government officials urging funding incentives for business-industry participation in work-experience programs and development of model legislation for state implementation. Conference proceedings will be disseminated to all states and territories of the United States. The Conference will be held May 4-6, 1977, in Denver, Colorado.

PRODUCT AVAILABLE: Forthcoming.

Contract No.: 400-76-0137 Funding: $30,855.

IMPROVEMENT OF THE COGNITIVE CAREER OCCUPATIONAL INFORMATION SECTION OF THE CAREER DEVELOPMENT INVENTORY (CDI)

Principal Investigator: Donald Super
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New York, New York 10027

The Career Development Inventory developed by Super is a widely used and well-received evaluation instrument. Under this project, the Occupational Information Section of the instrument will be revised and improved to increase its usefulness and value to the field and to the evaluation of education and work programs.

Two tasks will be completed:

1. To write information test items specific to each occupational cluster and to refine these by standard psychometric methods. The result will be reliable, content-valid and construct-valid occupational clusters, career and world-of-work information scores with part scores that reveal the degree to which each type of knowledge (e.g., duties, entry requirements, supply and demand, career patterns, way of life, etc.) has been acquired.

2. To validate this battery of tests against appropriate criteria, including grade different, curricular career maturity such as those included in the Career Development Inventory.

A pool of items with 20 occupational cluster keys (the number depending upon the exact cluster system used) will be developed. Each will consist of about 30 multiple-choice questions which may overlap. Students will respond only to the two or three most relevant occupational cluster/career tests in order to gather the most appropriate information in the most time-efficient manner.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-P-76-0032 Funding: $2,500.

PROCEEDINGS OF THE COMMISSIONER'S NATIONAL CONFERENCE ON CAREER EDUCATION

Contractor: DINGLE ASSOCIATES, INC.
525 School Street, S.W.
Washington, D. C. 20024

As part of the U.S. Commissioner of Education's series of bicentennial conferences on education, the Commissioner's National Conference on Career Education was held November 7-10, 1976, in Houston, Texas. More than 8,000 participants from education, labor, business, industry and government discussed career education. The National Institute of Education's contribution to the conference was to fund the preparation of the conference proceedings, which report the nearly 400 program sessions at the conference. The document is expected to be ready for distribution in late spring, 1977.

PRODUCTS AVAILABLE: Proceedings of the Commissioner's National Conference on Career Education. To be distributed by the U.S. Office of Education, Department of Health, Education and Welfare, Washington, D. C. 20202.

Contract No.: 400-76-0102 Funding: $49,754.

RESPONSE TO EDUCATIONAL NEEDS PROJECT

Principal Investigator: Vincent Reed
Superintendent
DISTRICT OF COLUMBIA PUBLIC SCHOOL BOARD
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THE DISTRICT OF COLUMBIA Public Schools/Response to Educational Needs Project is an inner-city educational program designed to improve the educational achievement level of approximately 28,000 disadvantaged children in the Anacostia area of Washington, D. C. The project emphasizes improving the knowledge, skills and attitude of the instructional staff through inservice training activities; mobilizing and coordinating the resources of the community and parents. The specific curriculum areas utilized are mathematics and reading. Through this comprehensive and systematic approach to addressing existing problems, it is hoped that a more effective and efficient total educational delivery system can be established, servicing teachers and students.

PRODUCT AVAILABLE: In progress. Of major interest are the summative and formative evaluations of the program being prepared by Richard A. Gibboney Associates; for which see the following abstracts.

Contract No.: OEG-0-72-0168 Funding: $6,604,523.

FORMATIVE EVALUATION OF THE RESPONSE TO EDUCATIONAL NEEDS PROJECT

Principal Investigator: Michael Langsdorf
RICHARD A. GIBBONEY ASSOCIATES, INC.
8117 Old York Road
Elkins Park, Pennsylvania 19117

The purpose of this formative study of the Response to Educational Needs Project (see the abstract above under the title District of Columbia Public School Board) is to support in every way possible through evaluation the rapid feedback of information to project leadership for the improvement of program implementation and quality and for the documentation of the level of implementation and project quality. Among the tasks required of the principal investigator are:

1. Development of operational definitions of R.E.N.P. implementation and program quality, using the project's proposed criteria as the starting point.

2. Development of an activities matrix for the three major components of the program (reading, mathematics and parent/community involvement) and linkages of what is to happen to the achievement of the criteria for full and high quality implementation.

3. Identification of the range of action and responsibilities of key staff by developing a plan for organizing and reporting formative evaluation tailored to the information needs and range of actions for each key staff person.

4. Preparation of a special report for the National Institute of Education which documents the extent of implementation and the quality of implementation (see below).

PRODUCT AVAILABLE: Final Formative Evaluation Report: The Extent and Quality of the Implementation of Grant Terms and Conditions for the Response to Educational Needs Project. Available from Richard A. Gibboney Associates.

Contract No.: 400-76-0056 Funding: $49,560.

THREE POLICIES OF THE ANACOSTIA COMMUNITY SCHOOL BOARD: A STUDY OF THEIR INTENT AND OPERATIONALIZATION

Principal Investigator: Michael Langsdorf
RICHARD A. GIBBONEY ASSOCIATES, INC.
8117 Old York Road
Elkins Park, Pennsylvania 19117

How can school boards be sure that implemented policies are really what the board members intended? As part of the Response to Educational Needs Project, Langsdorf charted the course of three Anacostia Community School Board policies--from intent through operation--to find answers to this important question.

The Anacostia Community School Board (ACSB) and its local school boards are working out school problems effectively using the bywords communication, cooperation and mutual commitment. This report picked out three broad policies for attention:

- "The Local School Boards shall have a direct involvement in their schools' dealing with concerns of importance to their community.

- "The Anacostia Community School Board shall have a direct involvement in the schools of Region I, dealing with concerns brought to them by the Local School Boards as being untreatable at the local level.

- "The Unit Task Forces at each school shall include in their composition at least three parents and one student, to provide direct input from the community to the Response to Educational Needs Project (RENP)."

Each board policy was examined with such questions as "What does it mean?" "Who generated the policy?" and "How was the policy communicated?." Identifying strategies for successful policies was further facilitated by looking at specific issues.

For example, concerns about buildings and grounds recurred most frequently. Repairs necessitated by vandalism or deterioration of the physical plant occupied time and attention of Local School Boards, and this provided an excellent opportunity to see how well the first policy was implemented. This issue provided a common point of interest to principals, teachers, parents and students, and each could support the other in efforts to remedy the situation at the local level. If local efforts failed, Local School Boards could take the matter to the Anacostia Community School Board, giving ACSB a chance at "direct involvement. . .with concerns. . .being untreatable at the local level." The wide representation on the local boards was evident in how and by whom "untreatable" concerns were presented in ACSB (policy three).

What messages does this hold for policy makers--say, advisory groups charged to help build good career education programs?

- Sometimes tangibles (such as repairs) provide proof that school boards can be effective problem solvers, thus serving as a starting point for local action. Later on, dealing with more abstract and complex problems can cement an increasingly productive partnership among persons having an interest in the smooth operation of the school district.

- All parties concerned--parents, students, teachers, principals and administrators--learn to communicate

better while serving on local boards, working together cooperatively and identifying local resources useful in improving school conditions. As the trust level builds, a sense of "team" emerges.

- Policies most likely to be successfully implemented are those which are consistent with the historical goals of the program, in the self-interest of those most affected by it, clear to all those concerned, formulated through broad participation of all those involved, within the skills of those charged with implementation and followed up throughout the implementation process by those who originated the policy.

PRODUCT AVAILABLE: Three Policies of the Anacostia Community School Board: A Study of Their Intent and Operationalization. Contact author for availability.

Contract No.: NIE 400-76-0056 Funding: (Included in overall project total.)

SUMMATIVE EVALUATION OF THE RESPONSE TO EDUCATIONAL NEEDS PROJECT

Principal Investigator: Michael Langsdorf
RICHARD A. GIBBONEY ASSOCIATES, Inc.
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Elkins Park, Pennsylvania 19117

The purpose of the study is to ensure that educators and the public will learn as much as possible from an investment of nearly $6 million over the past several years in a compensatory education program located in the Anacostia area of Washington, D. C. (see the abstract under the title District of Columbia Public School Board above). To achieve this purpose, the study will require (a) accurate identification of the most important questions in educational policy and practice that can be answered through examination of this program and (2) selection of the research design and data collection procedures assuring the strongest possible inferences.

Five questions have been selected for special study. They are:

1. Is R.E.N.P. a good or maybe even better way than most to ensure that classroom teachers are extremely competent?

2. Is R.E.N.P. a good or maybe even better way than most to help children stay in school and to learn?

3. Is R.E.N.P. affordable?

4. Is R.E.N.P. a long-term, massive project, a good or maybe even better way than most to spend federal dollars to help local education agencies?

5. Is R.E.N.P. a good or maybe even better way than most to achieve educational reform?

PRODUCT AVAILABLE. In progress. The final report is expected in fall 1978.

Contract No.: 400-76-0126 Funding: $185,000.

HOME/COMMUNITY-BASED CAREER EDUCATION PROJECT

Principal Investigator: Vivian Guilfoy
EDUCATION DEVELOPMENT CENTER, INC.
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Newton, Massachusetts 02160

Many adults already in school or working want accurate, up-to-date information when making career choices. While such information is not often readily available, adults who spend most of their time at home find career guidance particularly hard to get.

In Providence, Rhode Island, a unique adult counseling service is providing one answer to the question of access to career guidance--personal counseling via the telephone. To date, over 6,000 adults have benefited from NIE support of this career and life-planning service.

As one young mother said, "I wasn't able to really put things together. I didn't know where to start. I didn't know what was available." For her and other home-based adults, a well-publicized telephone number has been the central contact with skilled paraprofessional counselors and support staff who provide individualized career and educational information.

The focal group for phone counseling was people 16 years of age and older who were neither working nor attending school full time. There was particular emphasis on reaching home-based women, young people searching for a career, and the elderly.

A prime goal was to attract individuals who had little or no access to personal planning resources and provide them--via telephone--with information on how to make career decisions and nearby resources that would help. To accomplish this, the project's staff organized to:

- Advertise counseling using a broad-based media campaign including television and newspaper coverage.
- Collect up-to-date information about local education and training opportunities, publishing the findings in a variety of resource guides.
- Develop a Resource Center with extensive adult career education materials.

- Collect and analyze data on the characteristics and needs of home-based adults and critique how well the counseling service worked.

Who used the counseling service? Clients were predominantly white (93 percent), female (75 percent), married (51 percent) and between 20 and 35 years of age (67 percent). While about two-thirds of the clients had no preschool children, slightly over one-half did have children under 18 living at home. In general, clients came from lower-income families with almost two-thirds reporting incomes under $10,000 a year. Despite low incomes, the clients tended to be better educated than the Rhode Island population at large, with about one-half completing high school and over one-third having attended some college.

Those evaluating the project's services found that participants were enthusiastic about the counseling provided. Attracted in large part by commercial television and newspaper coverage, participants averaged between three and four telephone interviews throughout the counseling process. The overwhelming majority also expressed support of using the telephone rather than face-to-face contact, specifying the convenience of telephone communication.

In reviewing the results of counseling, evaluators noted that four out of ten (39.5 percent) of the clients had implemented a career or educational plan, 21 percent had enrolled in education and 18.5 percent had taken a job. Many more had made application for educational programs or were actively searching for employment.

Participants generally agreed that useful education and training information along with sound career guidance was crucial to the service's success. Adults also emphasized the importance of warmth, friendliness and helpfulness in counselors. Clients repeatedly mentioned that counseling had given them "a better idea of what to do" and "more confidence to do it," and there was strong support for some of the unique publications put together by the project like Women and the World of Work, From Liberal Arts and Sciences to Careers and External Degree Study: A New Route to Careers. In addition, the project staff has developed a series of five manuals to guide the planning of similar adult career counseling programs throughout the country.

PRODUCTS AVAILABLE: The Career Development Series; Women and the World of Work; From Liberal Arts and Sciences to Careers: A Guide; External Degree Study: A New Route to Careers. Available from ERIC.

Contract No.: NE-C-00-3-0121 Funding: $2,578,907.

THE ROLE OF WOMEN IN AMERICAN SOCIETY

Principal Investigator: Adeline Naiman
EDUCATION DEVELOPMENT CENTER, INC.
55 Chapel Street
Newton, Massachusetts 02160

How do girls learn that it is more important to get married than to be bright and successful, or boys learn that to be a man you need to be tough and competitive?

These are the messages, subtle but potentially devastating, that parents, friends and teachers impose on children--messages that often keep young women and men trapped in roles that may be both inappropriate and unfulfilling.

How can we help young girls and boys overcome the negative effects of this kind of sex-role stereotyping? One way is to present classroom materials that give them opportunities to think through the issues that will affect their life choices. The curriculum units titled "The Role of Women in American Society" do precisely that.

Two of a planned ten units are now available. Both are built around a half-hour original documentary film and include supplementary resource guides which can either stand alone or be incorporated into existing courses.

The first unit uses the films Vignettes and Girls at 12, a blue-ribbon winner in the 1975 American Film Festival, to help students examine the everyday lives of three young friends. In it the authors present the subtle and complex problems of sex stereotyping, social pressures and role modeling. The film portrays real-life situations and, together with the supporting materials, addresses such issues as the differing expectations for boys and girls in our society, what it means to be feminine or masculine, and whether being a "happy" woman allows room for having a career. A Teacher's Guide and a Student Resource Book, containing a variety of activities, substantial bibliography and filmography, are also available.

The second unit has as its focus the film Clorae and Albie, which deals with the lives of two young black women--one divorced, one single--who are facing the responsibilities of living alone, getting an education and finding some sense of purpose for their lives. The Resource Book that accompanies the film provides activities and references to help adolescents examine their own lives, capabilities and futures. All materials urge that life choices be made carefully and purposefully

and that alternative role and career models be provided to help young men and women achieve their fullest potential.

In production is a third film whose subject is a woman in mid-career. The film's theme will attempt to answer the question how far can a woman really go in our society toward a comfortable solution to the problem of family versus career? Distribution of this film is expected in early 1978.

PRODUCTS AVAILABLE: The films Girls at 12, Vignettes and Clorae and Albie and the accompanying teacher and student guides are available from the Educational Development Corporation.

Contract No.:	NE-G-00-3-0215	Funding:	$54,646
	NE-C-00-3-0121		$60,000
	400-76-0108		$100,000

ASSESSMENT OF THE EBCE PROGRAM

Principal Investigator: Reginald Corder
EDUCATIONAL TESTING SERVICE
Rosdale Road
Princeton, New Jersey 08540

This study will assess the effectiveness of the four Experience-Based Career Education (EBCE) projects (see Appalachia Educational Laboratory abstract above). It will assess them in terms of students' attainment of program objectives and in terms of the viability of the EBCE concept as an alternative to traditional secondary education.

Three phases of activity are being completed: (a) a planning and management development phase, including such tasks as the analysis of curricula and student objectives and a review of available measures (both in use by the EBCE projects and those available elsewhere); (b) a preliminary operational phase to arrange the conditions required by the experimental, true control and comparison group design and pilot test instruments (as determined for the conceptual analysis); and (c) an operational phase consisting of the longitudinal evaluation of the effectiveness of the projects during the 1974-75 academic year, the third development year of the EBCE projects.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-C-74-0118 Funding: $452,576.

PERFORMANCE CONSEQUENCES OF SEX BIAS IN THE CONTENT OF MAJOR ACHIEVEMENT TEST BATTERIES

Principal Investigators: Thomas F. Donlon and Marlaine Lockhead-Katz
EDUCATIONAL TESTING SERVICE
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Princeton, New Jersey 08540

Do words like "man," "boy," "he" and "him" in an achievement test have negative effects on the performance of girls taking that test? Do boys react differently to test items referring to sex-related roles like "knights in battle" versus "nurses caring for children"?

Differences in performance may occur when undue reference to one sex or the other appears in test items. To check this out, the Educational Testing Service has begun a project to analyze sex bias in test content and its impact on student performance.

The project now in progress will review the content of several major test batteries used at a variety of grade levels. The frequency with which males or females are referred to will be related to the differences in performance between boys and girls on those respective items.

If a relationship between sex bias in test content and student performance is confirmed, some changes may be needed in words used by test writers--all of which could affect the future placement of students, the kind of educational and occupational counseling students receive, and ultimately the lifelong options available to both young men and women.

PRODUCT AVAILABLE: The final report will be available from NIE in early 1977.

Contract No.: NIE-G-74-0008 Funding: $60,000.

SIMULATED OCCUPATIONAL CHOICE: A CRITERION OF COMPETENCE IN CAREER DECISION MAKING

Principal Investigator: Martin Katz
EDUCATIONAL TESTING SERVICE
Rosdale Road
Princeton, New Jersey 08540

How good are students at making career decisions? How can their competencies be measured? How can we help them improve their career decision-making skills?

The Guidance Research Group at Educational Testing Service has developed an experimental instrument which attempts to deal with these questions. It is called Simulated Occupational Choice (SOC) and can be administered to only one student at a time.

SOC puts students into a situation in which they draw on and display their competencies in career decision making. Their behaviors can be observed directly, recorded and described in a number of scores that are diagnostically meaningful. But SOC does not just provide a window on career decision making; it also offers a means of helping students become more aware of their values and learn how to process occupational information in a rational way.

The current version of SOC materials and training in their administration and scoring are available at cost from the developer. Prospective users should also read the final report on the project submitted to NIE in February 1976.

PRODUCT AVAILABLE: Simulated Occupational Choice exercises and final report. Contact author for availability.

Contract No.: NE-G-00-0216 Funding: $101,034.

CAREER EDUCATION INSTRUCTIONAL MATERIALS: A COMPENDIUM OF INFORMATION

Principal Investigator: P. Kenneth Komoski
EPIE (Educational Products Information Exchange)
463 West Street
New York, New York 10014

With hundreds of career education products flooding the market these days, school people find it tough to decide how to spend limited dollars. The Educational Products Information Exchange Institute's epie career education s*e*t*: Selection and Evaluation Tools is a selector's guide which analyses more than 700 commercial and noncommercial materials. Textbooks, films, slides, tapes, teachers' guides, workbooks, etc., for use with all age groups are described. A "Products Under Development" section alerts the reader to watch for forthcoming materials.

The first book of the two-volume package, How to Select and Evaluate Instructional Materials, presents a step-by-step method to help teachers and administrators pinpoint where they and their schools stand on career education.

The procedures for selecting appropriate materials deal with such questions as "Has the publisher specified learning objectives?" and "Which elements of career education are stressed?." Such clues to the nature and practicality of the materials will help staff decide how well these fit local programs.

How to recognize sexism and racism in career education materials is another important focus of this product. Blatant examples are easy to spot, but the subtle, more insidious ones are hard to discover and hard to counteract. Taking the position that education and educators must accept a key role in correcting inequality, strategies for detecting and counteracting sexism and racism in the classroom are suggested.

A second book, Analyses of Seven Hundred Prescreened Materials, helps the educator access more materials in a few hours than a parade of publishers' representatives could present in many weeks. The analyses specify titles, authors, publishers, components, target audience, curriculum role, producers' evaluation activities and instructional design. Elements of career education found in each item are identified: Self-knowledge, decision making, educational development, career awareness, economic awareness and other competencies.

The s*e*t* is available now from the developer.

PRODUCT AVAILABLE: epie career education s*e*t*. Contact EPIE for availability.

Contract No.: NIE-C-74-0138 Funding: $108,329.

SUPPORT FOR THE EVALUATION OF THE EXECUTIVE HIGH SCHOOL INTERNSHIPS PROGRAM

Contractor: Academy for Educational Development
EXECUTIVE HIGH SCHOOL INTERNSHIPS OF AMERICA
680 Fifth Avenue
New York, New York 10019

In order to facilitate a third party evaluation of the Executive High School Internship Program (EHIP), the program's national office will:

1. Provide the National Institute of Education's evaluation contractor (see the abstract under The Ohio State University below) with complete information on the background, history and current operations of the Internship Program.

2. Convene an advisory panel of districts representing EHIP to advise the contractor on key program outcomes and processes.

3. Collect information on the universe of program participants, from which a sample will be selected.

4. Provide information on a regular basis to all EHIP projects on the status of the evaluation.

PRODUCT AVAILABLE: In progress.

Contract No.: C-400-76-0061 Funding: $50,000.

RECURRENT EDUCATION

Principal Investigator: Selma J. Mushkin (Editor)
Public Services Laboratory
GEORGETOWN UNIVERSITY
Washington, D. C. 20057

Great-grandfathers may have thought school was a waste of time when there were cows to be milked and fields to plow. But what are his sons and granddaughters doing today? Taking classes in Organic Gardening and Employee Negotiations in continuing education programs.

The papers included in this volume derived from a 1973 international conference on recurrent education, defined as a system starting at the completion of formal compulsory schooling and continuing throughout the remainder of a person's active life.

Regarded by many as one of the most important alternative educational approaches in recent times, recurrent education would make it possible to alternate between leisure, work and education in a way that avoids the lock-step structure of educational systems in most nations.

Is there something U.S. educators can glean from these international experiences? Of particular interest to career educators is the discussion of whether the gap between schooling and the real needs of individuals and society has not reached a point where school and other forms of learning have to become more interconnected. Credentialism must not be allowed to block the paths to upward mobility through job opportunity. Many of the contributors see recurrent education as the best way to connect an individual's career, the educational system and the economic system. Access to continuing education should be an indispensable individual right in a modern democratic society.

What might happen if recurrent education were available to all? Perhaps an improvement in economic, educational and social equality. Perhaps greater economic productivity as the result of improved job skills and better decision-making ability.

Questions on implementation are still needing answers: How can continuing education be scheduled at the most convenient times? Where will it be conducted? How will "students" be selected? Will they want it in the first place? Who's going to pay for it? Who will teach?

PRODUCT AVAILABLE: Recurrent Education (1974). Contact NIE for availability.

Contract No.: NE-C-00-40002 Funding: $15,889.

MORAL DEVELOPMENT AND LIFE OUTCOMES

Principal Investigators: Lawrence Kohlberg and Marcus Lieberman
HARVARD GRADUATE SCHOOL OF EDUCATION
Larsen Hall, Appian Way
Cambridge, Massachusetts 02138

Does the level of moral judgment attained during late adolescence predict life outcomes as measured by job status, earned income, job satisfaction and life satisfaction?

In previous research on different cultures, Kohlberg found a progressive sequence of six moral stages. He defines developmental moral education as". . .the stimulation of the child to take the next step in the direction it is natural for him to move." It is expected that the attainment of higher stages of moral judgment by late adolescence will be a better predictor of life outcomes than adolescent I.Q., school achievement or vocational skills.

If the hypothesis is confirmed, the study will provide theoretical and empirical support for development of elementary and secondary school curriculum which enhances moral judgment and, thus subsequent life outcomes.

The study procedures call for the investigation of two groups of subjects. The first sample will test moral development and life-outcome among parents and their older children, 21-30. The second test sample of 50 males will examine the temporal relations of adolescent moral level to subsequent adult life outcomes. The basic analyses are correlational, i.e., the correlation of moral maturity with job status, job satisfaction and life satisfaction. Covariance due to I.Q., high school achievement and socioeconomic status will be controlled.

PRODUCT AVAILABLE. In progress.

Contract No.: NIE-G-74-0096 Funding: $61,933.

THE DEVELOPMENT OF CAREER AWARENESS IN THE YOUNG CHILD

Principal Investigators: Aimee Dorr Leifer and Gerald Lesser
Center for Research in Children's Television
HARVARD GARDUATE SCHOOL OF EDUCATION
Cambridge, Massachusetts 02138

When boys put on a stethoscope and girls a nurse's cap at age 3, they're acting out stereotypes about careers they can hold in the future. How do they learn these roles so soon? Primarily from parents and TV.

While most educators are more concerned about career decision making in adolescence and adulthood, the fact is that career "imprints" and self-concepts built in childhood have already taken hold.

Research reviewed in this paper says that at age 3, for example, white children are aware of stereotyped racial and female occupational roles and have accepted them. By eight years of age, children perceive the subtle messages about prestige assigned to differing occupations. Moreover, the eight-year old girl has already drastically limited her choice of occupations and has begun to consider careers deemed "appropriate" for women. Young black girls, on the other hand, show the effects of their own racial stereotyping and have developed higher aspirations than young black boys of similar age.

The forces which develop these stereotypes are complex and not yet fully understood. Yet the authors content that of these forces the major influences are parents and mass media, working in combination with the developing self-concept of the child. The parent role is seen as the most critical, being far more influential than that of peers, counselors and teachers. Parental influence continues throughout adolescence, usually reaffirming that a girl's role is simply more limited than a boy's, socially as well as occupationally.

Television is the other powerful force on the young child. Its potential in demonstrating a wide range of occupational activities and negating racial and sexual stereotyping is enormous, say the authors. Unfortunately, present programming lacks positive female and/or minority role models.

Despite the importance of self-concept and career aspirations, this relationship has been largely ignored in the development of career education programs for young girls and women. Research indicates that the self-concept of girls and women

incorporates a higher level of fear of failure and fear of success than that of males. These strong emotional barriers work to limit aspirations and influence females to choose less prestigious and less demanding careers.

What's needed to improve career awareness in young children? The authors favor materials that gradually reinforce positive attitudes about the work world, particularly the idea "you can be anything you want to be." They found that few materials meet these requirements. Most fail to suggest activities for 3-8 year olds (crucial development years) and reinforce traditional sex and racial occupational stereotypes.

Yet if children are to maximize their potential, educators clearly need to begin early, involve parents, and use all available media to help expand career horizons and to challenge traditional sex and racial stereotypes.

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 1: The Development of Career Awareness in Young Children. Contact NIE for availability.

Contract No.: NIE-G-74-0057 Funding: $56,108.

SCHOOLING, TRAINING AND EXPERIENCE: ECONOMETRIC INVESTIGATION OF DETERMINANTS AND RETURNS

Principal Investigators: Zvi Griliches and Richard Freeman
Department of Economics
HARVARD UNIVERSITY
Cambridge, Massachusetts 02138

"The more education the better" and "knowledge is power" may have been higher education's slogans for the past several decades. But the events of the early 1970's--severe economic recession, slowed growth in the "college-type" jobs available, and an increase in the number and proportion of college graduates seeking jobs--may have brought this perspective up short.

If teenagers or their parents look at going to college as an investment in the future, these events may be signalling a decline in the rate of return on this investment compared to the rate of return that could be expected a decade ago.

Male college graduates, for example, do not have as great an assurance of getting professional jobs simply because they have been though college; and their incomes, compared to their peers who did not go to college, may not be much higher. In 1969, six out of ten college graduates got professional jobs. Five years later only five out of ten got these kinds of jobs and those who did not apparently went into sales and blue collar positions.

What does this mean for the future of higher education and society in general? While going to college will continue to give an individual an advantage over his or her peers in getting higher status and better-paying jobs, the return on college as an investment may not be as great. Also, those who do not go to college may be less able to get good jobs as the educational requirements for these jobs continue to rise. Nonwhite groups, however, continue to benefit from higher levels of educational attainment.

Although economic forecasts of social changes should be treated cautiously, the following may well be in store:

- On one hand, the decline in college-enrollments--as well as in professional and higher-prestige opportunities for college graduates--may bring about a sharp curtailment in social mobility and possibly lead to greater class consciousness and conflict. On the other hand, this trend may be

offset as differences between incomes of professional and nonprofessional workers continue to diminish.

- There may be a sizable group of educated workers who are dissatisfied because they are unable to find jobs commensurate with the expectations fostered by their educational and training experiences. While this may result in political protest and general unrest, it may also be an impetus for job redesign and substantial improvement in the quality of work environments.

- Not all groups will be affected in the same manner. Young nonwhite men and women will continue to see the positive effects of anti-discrimination legislation and programs. Despite continuing problems for nonwhites, such as the instability of family background and the lack of advancement for older blackworkers, the higher levels of educational attainment for some is beginning to affect positively the career opportunities available to their children.

The changes in the economic rewards for education, cautions the author, may well imply numerous and significant changes for higher education. Students entering college in the coming decade will be looking for greater emphasis on professional training rather than broad liberal education. Expansion in higher education may depend heavily upon the increased interest of adults in professional development and lifelong learning.

In effect, higher education faces new challenges in the next two decades. It may not only need to reorient its focus by emphasizing professional training and adult programs, but also to help the young college graduate realistically prepare for a highly competitive job market.

PRODUCTS AVAILABLE: The Changing Economic of Education; Social Mobility in the "New Market" for Black Labor; Changes in Job Market Discrimination and Black Economic Well Being; The Declining Economic Value of Higher Education and the American Social System; Estimating the Returns to Schooling: Some Econometric Problems; Wages and Earnings of Very Young Men. Contact the authors for availability.

Contract No.: NE-G-00-3-0202 Funding: $165,500.

EDUCATION AND THE SOCIAL STRUCTURE OF AN AMERICAN CITY: PROVIDENCE, RHODE ISLAND 1885-1925

Principal Investigator: Ari Joel Perlmann
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HARVARD UNIVERSITY/MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
Cambridge, Massachusetts 02138

This study examines the way in which educational attainment shaped patterns of social mobility in American history. The study focuses upon 1885-1925 in Providence, Rhode Island, a period of great changes in the population of American cities and during which the amount of education received by typical city dwellers increased substantially. It will thus be possible to assess the relationship between education and mobility at various times and to consider the effects of educational supply upon occupational attainment.

Among the questions addressed are (a) does increase in levels of school attainment diminish economic returns to the education? (b) what kinds of high school programs--academic, vocational, parochial--contributed most to occupational mobility? (c) what significance did education play in the mobility of women and immigrants? (d) how did economic conditions such as depressions affect the returns to education?

Data will be collected from various sources in the Providence area, including school records, census schedules, tax books, newspaper listings of grammar and high school graduates and state marriage license forms. Samples will be selected from high school students in 1885, 1900, 1915 and 1925. Students will be traced through school records and tax books forward to sources indicating their occupation and property holdings in later life.

Despite emphasis upon education as a means of promoting social equality and mobility throughout American history and close scrutiny of the issue in contemporary society, quite little is known about the historical relationship between education and economic mobility in American society. The study will inform current concerns of career education regarding the extent to which (a) schools help individuals, particularly those at the bottom of the social hierarchy, (b) educational credentials required for jobs shift with increased supply of educated manpower.

PRODUCT AVAILABLE: In progress.

Contract No.: NE-G-74-0075 Funding. $29,824.

PREPARATION FOR AND SUMMARY OF A GREAT DEBATE ON CAREER EDUCATION

Principal Investigator: STEPHEN HEYNEMAN
2401 Virginia Avenue, N.W.
Washington, D. C. 20037

One influence on youth policy are such commonly-accepted generalizations as "most youths are no longer interested in college, the Great Society programs for youth failed, most youth are out for instant gratification and have no allegiance to the work ethic, the youth problem is just a passing phase and all we need to do is create jobs, improve the economy and wait for the population bulge to get older."

Such assertions are pivotal to many national policies now under consideration. Some of the suggested policies are a youth service corps, reduction of the school-leaving age and support for industry/education councils. The available evidence rarely supports or contradicts the pivotal assertions which underlie policy. Moreover, the evidence is itself seldom critically examined.

The purpose of a debate on Career Education would be to examine the central claims related to education and work where the evidence informing these claims seems available--or where a lack of evidence should be pointed out. Such a debate requires identification of an assertion, development of arguments affirming or denying the assertion, the actual debate and, finally, a report of the arguments, the discussion and the decisions to be offered as a contribution to public discussion.

The product of this contract is two-fold: first, the investigator will examine the literature, identify debatable assertions, frame debate propositions, select contributors of position papers and suggest conference participants. Second, the investigator will collect and edit the position papers, prepare synopses of the actual debate and write an introductory analytic chapter to the final report which will be published.

Note that this contract is not for the actual debate itself, costs for which will be assumed by the U.S. Office of Education.

PRODUCT AVAILABLE: In progress.

Contract No.: Funding: $5,520.

THE CAREER DECISION-MAKING PROCESS OF RECENT COLLEGE GRADUATES: RELATIONSHIPS BETWEEN PERSONAL TRAITS, EDUCATIONAL EXPERIENCES, OCCUPATIONAL OUTCOMES AND LEISURE

Principal Investigator: Lewis C. Solmon
HIGHER EDUCATION RESEARCH INSTITUTE
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Suite 850
Los Angeles, California 90024

This study will survey and analyze data from 25,000 individuals, college freshmen in 1970, to explore and evaluate the process by which these new entrants into the labor force make career decisions. The extent to which these employees utilize their college training will be assessed, as will the aspects of the college experience which are useful in occupations.

Factors that determine selection of major and occupation will be studied: these include sources and types of information available to former students, as well as their goals and values. One underlying question is the extent to which labor market factors affect these choices. The occupational selection process will not be evaluated merely by the degree of interface between education and job; rather, the final verdict will depend on job satisfaction and income on the one hand, and satisfaction with recent educational experiences on the other. We shall also investigate the relationship between satisfaction with occupation and satisfaction with leisure and other aspects of non-occupational time.

This research builds upon a recent study of an older group of workers which found substantial utilization of education in occupations and significant job satisfaction. The interface between education and work did not appear to affect job satisfaction or income. An important question to ask is whether the positive evaluation of higher education derived from the analysis of older workers still exists when referring to a younger group, given the recent economic recession and publicity about the alleged declining value of college.

Our study builds upon data already available on the group to be studied, collected in the freshman year (1970), and in the 1974 followup of 1961 freshmen. We will analyze differences by sex, race, major, and occupation, among those with B.A.'s and A.A.'s and those who did not complete any program.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0080 Funding: $125,861.

A STUDY OF THE UTILIZATION OF POSTSECONDARY EDUCATION IN CAREERS

Principal Investigators: Lewis C. Solmon and Ann S. Bisconti
HIGHER EDUCATION RESEARCH INSTITUTE
Suite 850
924 Westwood Boulevard
Los Angeles, California 90024

College courses may not help you do the job you thought you were training for, but having the sheepskin still serves as a union card.

So indicates a recent survey of 8,000 college graduates from the Class of 1965. Eleven years later, most had jobs requiring little of their college coursework. In fact, many held jobs far removed from their college major. Liberal arts courses like English and social science were often found to be more useful in the real world of work than many job-related offerings on campus.

Looking back on their college courses, most graduates had no clear career goals during their college years: Over half chose their careers at graduation or later. So most college courses were taken without much forethought or planning for the future. Indeed, the study shows that what you major in may help you do a better job in a different field than the one you thought you were preparing for at the time. For example, 53 percent wound up working for private companies and 38 percent followed general business careers, although only 18 percent had majored in business at college. Among the women represented in the original pool of 8,000, however, the greatest percentage became teachers. Less than half of all women surveyed saw their positions as having policy- or decision-making responsibilities.

Feelings were generally mixed about the usefulness of four college years in providing general knowledge and improving the ability to think. Although 73 percent rated their education as "very useful" in providing a well-rounded knowledge base, only 43 percent thought that college improved their thinking skills. They did agree though, that having the diploma was useful in getting their first job.

Of the persons seeking employment related to their college major, liberal arts grads had it the roughest--even in the mid-'60's. Moreover, when liberal arts graduates were pushed into any occupation they could find, they often wound up being dissatisfied. Since the job market for all college graduates is getting tighter, this trend may be on the rise.

Students could improve their employment prospects by being more tuned in to the career possibilities in their major and supplementing liberal arts training with practical courses. But even though vocational courses help, on-the-job experience is still better, claim the grads. Over half of the work skills needed on a job are learned after being hired. This was true even for occupations requiring considerable technical preparation, as in allied health fields.

Since so much training does occur on the job, liberal arts majors who are bright and highly motivated should be top candidates for jobs in the business world. No so, said the respondents. Employers still say they want persons with specific business education skills. Equal weight should be given, claim the authors of this report, to the communication, decision-making and critical-thinking skills that make for more versatile, creative employees.

PRODUCT AVAILABLE: The final report, College Education on the Job: The Graduates' Viewpoint, is available from the College Placement Council, P. O. Box 2263, Bethlehem, Pennsylvania 18001 (215-868-1421).

Contract No.: G-74-0091 Funding: $53,989.

WOMEN: ISSUES OF CAREER GUIDANCE AND VOCATIONAL COUNSELING

Principal Investigators: Helen Farmer and Thomas E. Backer
HUMAN INTERACTION RESEARCH INSTITUTE
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10889 Wilshire Boulevard
Los Angeles, California 90024

Nine out of ten U.S. women will work outside their homes at some time in their lives, spending an average of four hours a day on homemaking tasks in addition to time spent at their jobs. Furthermore, women born after 1935 are much less likely to interrupt their careers during the child-rearing years than women born before 1935.

What does it all mean? Women and girls have important career decisions to face, say the authors of New Career Options for Women: A Counselor's Sourcebook. Women often need professional guidance in planning for the dual role of homemaker and worker. Caught between these two roles, they frequently experience conflict, guilt and depression. Counselors can play a significant part in helping women reduce these feelings. Through such techniques as group discussion, role reversal, cognitive dissonance and the introduction of new role models, the negative feelings can be replaced with positive ones. Old myths like "women who work are neglecting their children" can be debunked.

Clearly women have much to gain from improved counseling--better life-planning skills, increased efficiency and support for reassessing distribution of household responsibilities with marriage partners, to name a few. But recent research concludes that information resource counselors used in the past is sex-biased, misleading and out of date. The Sourcebook and its two companion publications, New Career Options: A Woman's Guide and New Career Options for Women: A Selected Annotated Bibliography, are handy tools for the counselor. They provide solid information on changing stereotypic attitudes, teaching decision-making and problem-solving skills, increasing options and nontraditional career opportunities for women, women's legal rights in the world of work, counseling techniques and strategies, and a review of research on women in the workforce. Counselor trainers are provided with suggestions for teaching sex-bias-free counseling procedures and hints for helping counselors identify their own biases.

Things are looking up and this three volume set provides another stepping stone on the way.

PRODUCTS AVAILABLE: The Sourcebook and its companion volumes are available from their publisher, Human Sciences Press, 72 Fifth Avenue, New York, New York 10011.

Contract No.: NIE-C-74-0100 Funding: $20,433.

EFFECTS OF SOCIAL CLASS BACKGROUND ON THE CAREER COMMITMENT OF WOMEN ATTENDING NON-ELITE COLLEGES

Principal Investigator: Mary J. Guttmacher
THE HURON INSTITUTE
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Cambridge, Massachusetts 02138

Women from working-class backgrounds often hope to earn college degrees, but will they later go on to realize their career potential? The answer for many is "No," according to 289 women at a state college.

First of all, women tend to choose "feminine" occupations and thus they desire to enter career fields such as teaching that are already overcrowded. Even when college counselors tell them that such fields are essentially closed, they persist in preparing for them anyway.

Why do they do this? Apparently because parents steer them at an early age toward jobs that are "good for women." Then too, the college curriculum may not offer nontraditional career options.

Because career aspirations are narrowed at an early age, recommendations include involving parents in school career education programs and bringing children into contact with men and women who are in careers atypical for their sex. By making students aware of labor market realities at an early age--before they have closed their minds to career options--and by providing information about these options, it may be possible to encourage girls to make truly responsible choices.

The working-class women in this sample do not generally let their career take precedence over the roles as wives and mothers. While many hope to pursue careers outside the home at some point, they are unrealistic about the extent to which their family commitments will prevent them from meeting their career goals and vice versa.

The author suggests that career education be redefined as lifestyle education to help women and men see the demands of home and career on their lives and then make realistic choices about the lives they wish to lead. They should be encouraged to ask themselves such questions as: "Do I want to marry? Do I want to have a career? How can I reach both of these goals?" Teachers should help them make these choices and encourage women to have successfully balanced career and home commitments to be role models in career education programs for women.

PRODUCT AVAILABLE: Final report in progress.

Contract No.: NIE-G-74-0041 Funding: $13,629.

A COST-EFFECTIVENESS ANALYSIS OF THE ECONOMIC AND EDUCATIONAL IMPACT OF THE MOUNTAIN-PLAINS EDUCATION AND ECONOMIC DEVELOPMENT PROGRAM, INC.

Principal Investigators: Ernest W. Stromsdorfer and Karman Moayed-Dadkhah
Department of Economics
INDIANA UNIVERSITY
Bloomington, Indiana 47401

Estimation of the costs and benefits of training each family member in the Mountain-Plains Program is difficult. And the available data at Mountain-Plains essentially precludes such estimation.

Economist Stromsdorfer and colleagues examine four important questions often asked to assess success in job training efforts: Does the person find a job, at what skill or status level, at what wage or salary figure and what do these benefits cost?

In terms of measuring costs, it would have been simpler to look only at the cost of instructor services and the cost of the trainee's time as measured by lost wages. True costs of the Mountain-Plains program are confounded, say the researchers, by developmental costs that fluctuate between starting and stabilization, and by circumstances that would not be present in other communities--e.g., an airbase in a very rural area that is rented for $1 per year--and frequent changes in the program's structure.

Complete data could be obtained on only 122 persons who participated during the start-up period (out of several hundred who passed through Mountain-Plains). The absence of good data on a control group made the estimation of benefits difficult. Due to frequent program changes, it was not possible to measure costs in any reliable way. Thus, the final word on the net benefts of Mountain-Plains is still to be written.

One particularly useful appendix criticizes previous efforts at gathering cost-effectiveness data in career education. It notes that cost-benefit ratios should only be one tool for decision makers to use in judging the worth and viability of such programs.

PRODUCTS AVAILABLE: A Cost Effectiveness Analysis of the Economic and Educational Impact of the Mountain Plains Education and Economic Development Program, Inc. Contact authors for availability.

Contract No.: NIE-C-74-102 Funding: $33,770.

A PROCEDURAL FIELD TEST INSTRUMENTATION

Principal Investigator: Michael Halbert
INSTITUTE FOR THE STUDY OF INQUIRING SYSTEMS
3508 Market Street
Philadelphia, Pennsylvania 19104

During its work in field-testing 45 curriculum units for the Comprehensive Career Education Model I (school-based) program, the Institute for the Study of Inquiring Systems (ISIS) developed a knowledge base which is described in a monograph. The monograph also outlines procedures to assist research groups wishing to use the innovative productive tests developed by ISIS for the Model I program.

The monograph helps advance our ability to measure what young children learn from educational experiences. The productive tests represent a new approach to educational assessment; the monograph stimulates discussion of this approach.

PRODUCT AVAILABLE: Productive Tests and Their Application to Career Education, by Michael Halbert (1974). Contact the Institute for the Study of Inquiring Systems for availability and cost.

Contract No.: NIE-C-74-0014 Funding: $22,673.

PRE-OCCUPATIONAL PREFERENCES, AND OCCUPATIONAL ATTAINMENT: CAREER DEVELOPMENT THROUGH EARLY ADULTHOOD

Principal Investigator: Karl Alexander
Department of Social Relations
THE JOHNS HOPKINS UNIVERSITY
Baltimore, Maryland 21218

Employing longitudinal data on a national sample of youth, various subsamples of which were followed from the 5th, 7th and 9th grades to, respectively, high school graduation, one year post-high school, and three years post-high school, the proposed research will examine the processes through which pre-occupational interests are formed and subsequently translated into occupational preferences and attainments. A synthesis of psychological, sociological and economic approaches to the study of career development processes will inform our analyses; in particular, the proposed research will seek to determine the relative importance of abilities, ascribed characteristics, interpersonal relations and environmental constraints for the development of adolescents' prevocational interests and their eventual occupational preferences and attainments. Structural equation modeling will be the major mode of analysis.

PRODUCT AVAILABLE. In progress.

Grant No.: NIE-G-76-0078 Funding: $150,249.

SCHOOL PROCESS AND CAREER DEVELOPMENT OF STUDENTS

Principal Investigators: Karl Alexander and Edward McDill
Center for the Study of the Social Organization of Schools
THE JOHNS HOPKINS UNIVERSITY
Baltimore, Maryland 21218

Most students spend at least 12 years in school buildings. What goes on behind those walls has a lasting effect on the lives of those students. The Center for the Study of Social Organization of Schools (CSOS) has been studying how school process variables affect what happens after students graduate.

These studies investigate (a) the transition from high school to post-secondary institutions and (b) the role of schooling in the development of career plans and on labor market outcomes. Using data from the Exploration of Equality of Opportunity Survey (EEO), CSOS studied sex differences in career orientations, socialization and timing of marriage to help explain the gap between the educational outcomes of men and women. Employing the Twenty Schools Survey, CSOS examined the relative influence of student characteristics on curriculum placement and the subsequent affects of curriculum on achievement and educational plans. Employing the National Longitudinal Survey, CSOS examined the relative importance of student background characteristics (race, sex, socioeconomic status) and of curriculum placement in secondary school for access to alternative forms of post-secondary education. Enrollment in four-year colleges and universities, two-year colleges and vocational-technical schools were all considered.

Finally, employing the EEO survey, an analysis was undertaken which evaluated the degree of bias in human capital estimations of various career returns to education (earnings and occupational status). Specifically, the study estimated the dependency of both educational and labor-market rewards on common antecedents (academic ability and socioeconomic status).

PRODUCTS AVAILABLE: Selection and Allocation Within Schools: Some Causes and Consequences of Curriculum Placement. Specification Biases in Estimates of Socio-economic Returns to Schooling and High School Context, College Quality and Educational Attainment. Both studies are available from CSOS.

Contract No.: NIE-400-76-0034 Funding: $50,000.

WOMEN AND MATHEMATICS

Principal Investigators: Lynn Fox
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Elizabeth Fennema
School of Education
UNIVERSITY OF WISCONSIN
Madison, Wisconsin 53706

Julia Sherman
3917 Plymouth Circle
Madison, Wisconsin 53705

Women, compared to men, are under-represented in occupations requiring mathematics and are over-represented in a narrow range of lower status occupations. Many economists contend that occupational segregation is one of the primary causes for the lower wages of women and note little change in the last 70 years.

According to the experts, there are structural and non-structural explanations for the under-representation of women in occupations requiring mathematics. Structural explanations center around issues of institutional barriers, such as hiring practices and access to education and training. Non-structural explanations note sex differences in selection of mathematics and achievement. There are thus three broad areas of investigation for this phenomenon: sex role socialization, cognitive and affective factors and genetic factors. The three researchers listed above will each investigate one of these areas--Fox, sex role socialization; Fennema, cognitive and affective factors; and Sherman, genetic factors.

Each will conduct a comprehensive review of the literature, develop an annotated bibliography, prepare a summary, synthesis and critique of the literature, and finally, develop conclusions about this knowledge as well as recommendations for Federal support of research and development.

PRODUCTS AVAILABLE: In progress.

Contract No.: NIE-400-76-0112 Funding: Lynn Fox - $10,674
NIE-400-76-0113 Elizabeth Fennema - $7,977
NIE-400-76-0114 Julia Sherman - $5,402

A STUDY OF ENTRANCE INTO TYPE (SITUS) OF WORK: ANTECEDENTS AND SOCIOECONOMIC CONSEQUENCES

Principal Investigator: Linda S. Gottfredson
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Vocational psychologists and counselors generally assume that job satisfaction and adjustment depend on a good match between a person's interests and the kind (situs or job family) of work he or she does. They have not examined, however, either the process of entry into or the socioeconomic consequences of entering one situs rather than another. Sociological and economic approaches to the study of career development focus on the antecedents and socioeconomic consequences of level or status of job held but they ignore situs of work. Recent work integrating the different approaches indicates that different situses may be different reward systems, some being more remunerative than others for a given educational level, and that blacks are found more often than whites in the least remunerative situses. Entry into situs of work thus appears to be an important but unexplored career decision.

This study will examine in detail (1) the pathways into different situses (Holland occupational categories), (2) the processes of income and status attainment within different situses, and (3) differences by race in situs entry, income, and status. Four sets of personal characteristics will be examined for their influence on entry into and advancement within different occupational situses: family background, personality (including ability), educational experiences, and labor force experiences. The analysis of entry into the different situses will include a multiple discriminant analysis to discover which sets of characteristics and which variables within those sets best distinguish among workers in the different situses. The analysis of attainment processes within situses will include regressions of income and status on the four sets of personal characteristics to provide evidence on which sets of characteristics and which particular variables within those sets are most important in each of the situses for predicting differences in attainment. Survey data (Parnes and Grasso, 1975) on the employment experiences of young white men and black men will be used.

The proposed research will be useful to educators and policy makers in several ways. For example, it will provide more

information about one occupational classification scheme that is widely used in planning and implementing career education programs. Also, it will provide more evidence about which educational and work experiences might be useful for different types of students planning their careers and for workers attempting to improve their careers.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0075 Funding: $56,522.

CONTINUING EDUCATION AND EARLY CAREER ATTAINMENTS:
DETERMINANTS AND OCCUPATIONAL EFFECTS OF GOING BACK TO SCHOOL

Principal Investigator: Nancy Karweit
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Educational attainment plays a dominant role in the occupational attainment process. Typically, the estimates of the importance of educational achivements for occupational accomplishments have assumed that individuals complete their educational activities prior to labor force participation. Yet, it has been shown that a substantial proportion of Americans continue their education after beginning to work. Consequently, these estimates are likely inaccurate to some degree and, because certain segments of the population may use continuing education more than others, these estimates may be less accurate for some subgroups than for others. The proposed research examines the issue of the occupational effects of continuing education by focusing on four issues: antecedents of stopping schooling; antecedents of resuming schooling; occupational effects, in terms of income, prestige and career patterns, of resumed educational activities; and the relative pay-offs of differing educational activities. The results should provide a better understanding of the nature of the education and work association, and should document how education, undertaken after entry into the labor market, affects later career developments. Specific attention will be given to black-white differences in the use and occupational effects of continuing education. The proposed analyses are possible because of the availability of the Life History Sample, a unique set of data covering approximately 20 years of experiences since age 14 of a representative national sample of black and white men, that is rich in detail concerning various kinds of attachments to education and work.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0073 Funding: $66,035.

LIFE HISTORY DATA ON THE OCCUPATIONAL EFFECTS OF OBTAINING EDUCATIONAL CREDENTIALS THROUGH ALTERNATE ROUTES

Principal Investigator: Nancy L. Karweit
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A substantial number of Americans have acquired educational credentials through routes other than continuous full-time schooling, e.g., through high school equivalency programs and post-secondary external degree programs. However, little is known about these routes or about the occupations that result.

Accordingly, this project examined the patterns of attaining credentials through non-standard routes, who uses such routes and the occupational effects of these non-standard routes.

Data were drawn from the life history sample collected at CSOS. The sample of 1,589 men contains retrospective data on the attitudes and activities of respondents from age 14. The educational and occupational histories of wives are also included.

This study fits into career education concerns by describing and understanding the correlates and consequences of alternative educational patterns. Neither the occupational nor the personal results of non-traditional educational patterns are known. Additionally, the study of wives provides insights into the relationship between educational, familial and occupational variables.

PRODUCT AVAILABLE: Life History on the Occupational Effects of Obtaining Educational Credentials Through Alternate Routes, by Nancy L. Karweit (1976). Available from CSOS.

Contract No.: NIE-G-74-0097 Funding: $9,788.

ACHIEVING COMPLIANCE STUDY

Principal Investigator: Robert J. Harper II
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Arlington, Virginia 22202

Federal education legislation is a statement of policy and often contains provisions for ensuring that the intended policy is carried out. Many of the mechanisms for ensuring compliance appear to rely on three approaches: the monitoring by U.S. Office of Education personnel of funded programs, reports of reviews by the U.S. Office of Education for compliance prior to federal awards and reports by the National Center for Educational Statistics, often of the nose count type. In addition, the General Accounting Office reports provide the Congress with information on compliance; however, these reports often depend on the same information available to the U.S. Office of Education. Resort to the federal courts, while not usually embodied in Federal education legislation, is a third source of compliance.

Almost nothing seems to be known about the range of mechanisms available to achieve compliance and their effectiveness. Little seems to be known about alternatives, such as grassroots organizations, which might more efficiently achieve compliance and enforcement.

The purpose of this study is:

1. To describe the mechanisms of compliance embodied in Title IX and the Vocational Education Act and to find out what other compliance mechanisms have been used.

2. To review the available information on the costs and effectiveness of these mechanisms.

3. To discuss alternative strategies, in outline form, for achieving compliance. To determine which of these strategies could be considered for framing into new legislation with particular attention to the cost-effectiveness of various approaches.

PRODUCT AVAILABLE: In progress.

Contract No.: 400-76-0087 Funding: $6,500

RESIDENTIAL CAREER EDUCATION PROGRAM FOR DISADVANTAGED FAMILIES

Principal Investigator: Ken Blackburn, Acting Executive Director
MOUNTAIN-PLAINS FAMILY EDUCATION AND EMPLOYMENT PROGRAM, INC.
Glasgow AFB, Montana 59231

Most career education efforts focus on one person and particular school or career needs. To see how career education can meet many life needs for an entire family, look at the Mountain-Plains program now in its fifth year of operation near Glasgow, Montana.

Some 200 families at a time actually pick themselves up and start anew, with plenty of help from a staff and program that cater to each person's unique needs, interests and competencies.

Leaving their homes in Idaho, Montana, North Dakota, South Dakota, Nebraska and Wyoming for an average eight-month stay at a remote, inactive Air Force base, families learn to overcome the social, educational and personal handicaps that have kept them unemployed or underemployed. Job skill training and career guidance are available to adults, while the whole family participates in counseling, recreation and general educational development. School-age children attend the base elementary school or are bused to secondary schools in Glasgow. Child care is provided when both parents are involved in program activities.

By renting and carying for their duplex-style housing, joining in neighborhood gatherings, participating in student government and using medical and other services, families learn to be wise consumers and good citizens. Home management, health, consumer education, parenting, community participation and leisure time skills must be demonstrated prior to completion. This open-entry/open-exit system demands initiative from each adult, who must plan his or her own instructional program and counseling cycle.

Three families apply for every one accepted. The typical adult is 26 years of age and an 11th grade dropout who reads and computes at the 8th grade level. Previous vocational training is minimal. Entering families are generally at or below the poverty level.

Applicants make first contact with coordinators in their home state. Moving allowances are provided and a weekly stipend

is later paid on the basis of class attendance, much like an hourly wage. When program completion requirements are met, families select a place of residence--seldom their former home--within the six-state region, and interviews are arranged for the head of household. Relocation expenses are covered by Mountain-Plains, and families receive help in finding housing. Local state coordinators follow up to make sure families adjust to their new situations.

Occupational training--the primary emphasis at Mountain-Plains --covers entry-level skills in some 40 jobs for which employment opportunities throughout the six-state region are good. Several hundred individually-paced study units and 2,700 Learning Activity Packages are available in four broad clusters: Building Trades and Services, Automative and Small Engines, Tourism and Marketing, and Office Education. If students need help in basic skills like reading and math, Foundation Education is available. Students also learn how to find a job, write a resume and handle an interview.

Preliminary results are noteworthy: About 75 percent of all students complete the program, and of those, over 80 percent are on the job within a month. Three weeks after exit, the average income gain for heads of households is $206 per month. Tests show strong gains in such attributes as acceptance of self and others, personal judgment and ability to focus on the task at hand. Employers say they're very satisfied, too.

As with any complex social program, there were developmental problems: Difficulty in recruiting a top-notch staff, the challenge of building a family-centered curriculum from the ground up, the frustration of managing an incredibly complex recordkeeping system and problems in adjusting to a harsh climate, extreme geographic isolation and the bureaucratic complexities of a military facility.

Yet, even with an average cost of about $14,000 for a family of 3.5 members, early returns show the payoff in terms of personal growth, life skills and job success is impressive. One independent study of preliminary data shows it takes a relatively short time (less than ten years) for families to pay back the government's investment, thanks to the earning power Mountain-Plains graduates enjoy. Equally important--though more difficult to measure--is each graduate's expressed satisfaction with a new life style.

PRODUCTS AVAILABLE: Contact Mountain-Plains for information on several dozens reports and materials now being disseminated.

Contract No.: NE-C-00-3-0298 Funding: $12,498,959.

MONOGRAPH ON THE MOUNTAIN-PLAINS EXPERIENCE

Principal Investigators: (See below.)

While some people are debating whether a "systems approach" to delivering human services such as education and economic development will work, the Mountain-Plains program is proving it can. That's the opinion, at least, of five education and social science experts asked by NIE to look at the program and compare it with what they know about similar efforts.

Some features these reviewers liked were:

- Clearly-specified objectives are used to guide every aspect of the program--from curriculum to eventual placement.
- Shared decision making is promoted at all levels even though leadership is strong and centralized.
- The definition of "disadvantaged persons" includes poverty levels, physical abilities, cultural backgound and personal and family adjustment needs.
- Students are judged on their actual performance as well as on standardized tests.
- Program evaluation strategies are flexible enough to assess almost all of what is happening.
- Placement and followup services are given as much attention as selection and preparation services.
- Close intergovernmental cooperation is essential.

What features of the Mountain-Plains model should potential adopters consider carefully?

- It takes a lot of staff time to work with individual family members.
- Students seem encouraged to "lock in" on an occupational choice early rather than exploring a variety of options as is typical in career education for adolescents.
- The program will not be a cure-all for every family's problems; considerable responsibility and self-initiative are still required.

- Careful management is essential when there are so many human needs being served.
- Mountain-Plains' location and site are not typical even though any state could probably find appropriate facilities for housing such a program.

Perhaps the reason why Mountain-Plains' approach to career education for rural, disadvantaged families has proven feasible is that so much was borrowed from other tried and true programs:

- Health care and community child care are common features in established poverty/rehabilitation-type programs.
- Attention to basic skills is enjoying a resurgence at the secondary school level.
- Occupational preparation programs are improving all the time thanks to innvoative efforts by vocational educators.
- Personal counseling as practiced at Mountain-Plains has been developed at many colleges and universities.
- Individually-tailored study programs (including private study space) are usually features of university graduate education.

Specialists who contributed their insights in this monograph were Steve Zifferblat, Stanford University (curriculum and instruction); Daniel Stufflebeam, Western Michigan University (evaluation); Edwin Herr, Pennsylvania State University (guidance and counseling); Louis Kishkunas, Superintendent of Denver, Colorado Public Schools (occupational preparation); and Robert Darcy, Colorado State University (recruitment, selection, placement and followup).

PRODUCT AVAILABLE: The Mountain-Plains Experience: Lessons from a Residential Career Education Center for Rural Multi-Problem Families--will be available in spring 1977. Contact NIE for status.

Contract Nos.: NIE-C-74-0063, 64, 65, 66, 67.

Total Funding: $49,045.21.

USE OF EDUCATION AND TRAINING IN THE PRIVATE SECTOR

Principal Investigator: NATIONAL MANPOWER INSTITUTE
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Washington, D. C. 20036

According to recent figures, only 5.3 percent of workers take advantage of accessible education and training opportunities; for blue collar workers--many of whom have contract-negotiated tuition funds from their employers--the figure drops to one percent. This study aims to find out what these rates mean and why they are seemingly so low.

Accordingly, the investigator will:

1. Develop an up-to-date listing and analysis of existing tuition-aid plans under collective bargaining agreements.

2. Study the factors affecting employee participation in these tuition-aid plans.

3. Develop a standard for measuring what participation rates seem "low," "medium" and "optimum" from different perspectives.

4. Establish a national advisory panel of representatives from management, union and education community members to oversee and facilitate the entire project.

These tasks having been accomplished, the investigator will then present the National Institute of Education with options for the design of a second phase. If accepted by the Institute, the second phase of the study will be an experiment developed with the cooperation of a local consortium of education, industry and labor representatives. The experiment will attempt to increase worker participation in education and training programs to optimum levels at selected sites.

PRODUCT AVAILABLE: In progress.

Contract No.: 400-76-0125 Funding: $206,938.08.

INDUSTRY-LABOR-EDUCATION COUNCILS

Principal Investigators: Paul E. Barton
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Sue B. Bobrow
THE RAND CORPORATION
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While there has been a good deal of publicity about the need of Industry-Education and Work-Education Councils, little attention has been directed at understanding those activities which are already being supported by existing councils. Accordingly, the Education and Work Group has commissioned three papers on Industry-Labor-Education Councils. They are:

1. Paul E. Barton of the National Manpower Institute will prepare a conceptual paper which defines Industry-Education-Work Councils, presents operational criteria for identification of the councils, specifies major policy questions which the councils should attempt to answer and presents an overview of the state-of-development of existing Industry-Education Councils with major focus on the transition of youth to work and adults to school.

2. Dr. John J. Walsh of Olympus Research Corporation will prepare an analytic paper describing past and current mechanisms similar to Industry-Labor-Education Councils, their accomplishments and failures and problems common to each of the selected mechanisms tried. Critical issues emerging from this paper will lead to suggested action to overcome mistakes made in the past and further research and necessary actions if these councils are to be effective in the future.

3. Dr. Sue B. Bobrow of The Rand Corporation will prepare an analytic paper which specifies the processes by which young people make and attain occupational choice, whether Industry-Education Councils have characteristics which might be expected to affect choice and attainment problems and if councils have utility possibilities for helping solve youth's occupational choice and attainment problems.

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 10: Industry-Labor-Education Councils forthcoming from NIE in Spring 1977.

Contract No.: NIE-P-76-0181 Funding: $16.082

EDUCATION AND SOCIAL STRUCTURE: AN HISTORICAL STUDY OF IOWA, 1890-1930

Principal Investigators: Richard Jensen and Mark Friedberger
THE NEWBERRY LIBRARY
60 West Walton
Chicago, Illinois 60610

What role did education play in American social history from the Civil War to the 1930's? Did it lead or follow the change from blue collar/white collar occupations and the shift of people from farms to towns and cities?

Jensen and Friedberger investigated the educational environment and educational attainment in Iowa during the early decades of the 1900's using data from the Iowa census manuscripts of 1915 and 1925 to establish educational returns for the general population and for various ethnic, religious and occupational groups. Also assessed was the effect of industrialization on Iowans' social mobility as measured by intergenerational change in the occupational structure.

Among farmers, education made a minor contribution to patterns of inter-generational mobility and increasingly inheritance of wealth was the key determinant of economic well-being on the farm. In urban Iowa, education had a more positive effect on socioeconomic achievement, leading rather than following inter-generational change. The authors note, however, that in Iowa today farming has "not only become an attractive occupation for men and women from non-farm backgrounds, it also requires, to be successful, considerable economic resources and a highly technical college education."

PRODUCT AVAILABLE: The final report, now available from the authors, will be published in book form by Harvard University Press, Cambridge, Massachusetts 02138 in the near future.

Contract No.: NE-C-00-3-0-0067 Funding: $85,000.

ENTITLEMENT PAPERS

Principal Investigator: Norman Kurland (Editor)
NEW YORK STATE DEPARTMENT OF EDUCATION
Albany, New York 12224

Many recent studies have concluded that inadequate financial resources present a barrier to many adults who want and need additional education. One way such a barrier could be overcome is through an entitlement mechanism financed through the public sector.

Accordingly, the Education and Work Group commissioned a number of papers on the entitlement concept. Their purpose was to design entitlement models focused on a specified population: persons 25 years or older who seek additional education, training or capital for a career-related purpose. These designs, of interest to everyone concerned with post-secondary education, will lead to a demonstration project in fiscal year 1978.

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 4: Entitlement Papers, edited by Norman Kurland. Available from NIE in December 1976.

Contract No.: NEC-00-3-0121 Funding: $9,000.

TOWARD AN EDUCATIONAL SYSTEM ARTICULATED WITH ADULT SOCIETY

Principal Investigators: R. R. Boese and J. W. Cunningham
Center for Occupational Education
NORTH CAROLINA STATE UNIVERSITY
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Raleigh, North Carolina 27607

Just about every youngster wonders why she or he must go to school. Helping young people see the relevance and purpose of education is the ultimate goal of which this study is a part.

Two basic premises underlie the programs of "Toward an Educational System Articulated with Adult Society." The first holds that if education's purpose is to prepare people for meaningful roles in adult society, then school activities must relate to activities students will encounter when they leave the school setting to join the adult world. The second premise is that "ergometrics," an established technology for quantitative activity analysis, can help translate and organize information about adult activities into appropriate and useful educational programs for the still-in-school set.

The book, Systematically Derived Dimensions of Human Work, summarizes the results of researchers' analysis of work activities and conditions. Aimed at helping school people develop educational activities through which students gain realistic understandings about the world of adult work, a series of 12 reports on ergometric analysis is the forerunner of a set of occupational exploration booklets for classroom use.

PRODUCT AVAILABLE: Contact the Center for Occupational Education for availability of the 12 reports.

Contract No.: NE-C-00-3-0070 Funding: $254,728.

MANPOWER DATA AND VOCATIONAL EDUCATION

Principal Investigators: D. W. Drewes and Douglas S. Katz
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North Carolina State University
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Labor market information is seldom used and usually distrusted in planning vocational education programs. Most training programs are born out of teacher interest, student requests, employer surveys, reviews of local want ads or other "hunches" about what should be offered to whom.

According to a 10-state survey by the Center for Occupational Education, local school districts and community colleges generally are not required to use data from the Federal Bureau of Labor Statistics or other sources to justify starting new programs or phasing out old ones. However, these data are often fed into state-level planning efforts.

Instead, local administrators trust their own advisory groups and local surveys a lot more than Labor Department reports--which are often "too complex to understand anyway." Educators tend to feel government data emphasize national and statewide trends rather than local needs.

Yet since today's workforce is highly mobile and requires specific as well as generalizable skills of its members, how should this information exchange occur? Even though student and staff interests should be given consideration, programs that do not reflect present or future labor market needs and that provide students with nonmarketable skills seem inexcusable.

To improve both the source and the use of labor force needs, the report recommends many changes:

- Establish an information coordinating committee made up of the U.S. Commissioner of Education, Commissioner of Labor Statistics and Assistant Secretary of Labor for Manpower to develop a comprehensive labor market information system usable by the general public, schools and governmental agencies.

- Identify, via the U.S. Office of Education, exemplary vocational education enrollment projection systems and developing standardized definitions for use in data reporting.

- Implement standardized student followup procedures.
- Emphasize in Bureau of Labor Statistics reports more local labor market data using an informal, narrative style.
- Identify exemplary practices among state and local vocational education agencies and get the information on good programs out to interested agencies.
- Develop a better dissemination procedure between the Department of Labor and educators and increase the dialogue between statistical experts and data users.
- Develop training packages to assist vocational educators in making manpower material usable.

The message: If existing manpower data are to impact on the planning of local and state vocational education programs, changes must be made. Otherwise manpower data will continue to gather dust on vocational educators' bookshelves.

PRODUCT AVAILABLE: Manpower Data and Vocational Education: A National Study of Availability and Use. Available from the Center for Occupational Education.

Contract No.: NE-C-00-3-0069 Funding: $639,372.

CAREER EDUCATION CONCEPT RELATIONSHIPS STUDY

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While career education was emerging as a priority for American schools in the early 1970's, few people knew where the idea would lead or what the federal role should be.

Bringing many views to bear on the problem, several concept studies covering a variety of topics and perspectives on career education issues served as guides for planners and researchers.

Essays on Career Education. There is no pat definition here, but rather a framework for understanding career education that became a basic document in the emerging literature on "the movement." This comprehensive look at what career education is and can be contains 24 papers by students, teachers, administrators, and leaders of business, industry, labor and government. The critiques were commissioned by former Commissioner of Education Sidney P. Marland, under whose leadership career education became a familiar phrase. Available from the Government Printing Office, Washington, D.C. 20402.

Career Education Survival Manual. Based on a state-of-the-art study in 1972-73, this book covers issues and possible answers for persons interested in the why's and how's of career education. Many unfolding definitions of the concept are offered, and its problems, pitfalls and parameters are identified--all guiding the reader toward building a local response to career education. Available from Olympus Publishing Company, 1670 E. 13th St., Salt Lake City, Utah 84105

Counseling and Guidance: A survey of Current Practices and Analysis of Implications for Career Education Guidance and Counseling Programs. Based on extensive interviews with counselors and others concerned with counseling and career education, this work recommends that counselors:

- demonstrate and maintain certain competencies;
- be chosen for their ability to relate well with people;
- be future-oriented;

- be prepared to work with special groups such as minorities, women and the handicapped;
- avoid taking on administrative chores that cut into guidance time;
- specify objectives for themselves;
- learn to work with community agencies.

As for labor market information, how schools use such data and its apparent reliability are both inadequate. Local projections are seldom available and counselors often don't pull together what's at hand.

Process Analysis and Documentation for Utilization of Research Findings. While government spends ten times as much money on research as it spends on getting the results into the hands of practitioners, industry's scales are tipped the other way--more on marketing and less in research. While not making judgments about either practice, this study calls for researchers and developers to document and market their work so that people who will carry out new programs can follow step-by-step procedures and avoid the hidden pitfalls.

Basic Skills Study. Not much is known about the relationship of literacy--primarily reading ability--and success in getting and holding a job, concludes this study. An increase in literacy is not necessarily a passport to a better occupation. Also, remedial programs designed to bring persons up to par may be expensive and may not be all that reliable. Factors like dialect may influence an employer more than the applicant's ability to read and compute. And as far as delivery goes, teachers still have greater impact on students when it comes to helping learners improve their basic skills than aids like teaching machines and packaged materials.

PRODUCTS AVAILABLE: See above. Contact developer for further information.

Contract No.: OEC-4-7-062871-3059 Funding: $215,700.

CAREER EDUCATION IMPLEMENTATION: A HANDBOOK FOR STRATEGY DEVELOPMENT

Principal Investigator: Center for Vocational Education
THE OHIO STATE UNIVERSITY
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Persons responsible for getting career education started--often called "advocates"--typically encounter a number of barriers. School staff can anticipate problems experienced by other career education innovators and use various techniques to overcome those obstacles.

The handbook assumes a product--such as a curriculum unit or a total program--is on hand and ready for use.

- Establish incremental objectives. Outline what is to be done, under which conditions and how well.
- Profile influential elements. Understand the product to be installed (its good and bad features), who is in the best position to help or hinder (organizational dynamics both in school and community), and how much clout the advocate possesses.
- Select appropriate installation techniques. Depending on the conditions at a particular point in time, career education advocates may choose from among 30 distinct techniques classified under three broad headings: 1) informative (telling and showing), 2) persuasive (influence and appeals), and 3) coercive (use of power).
- Time the actions. Anticipate likely reactions of decision makers in both school and community; then lay out costs and schedules within those parameters.
- Initiate the actions. Keep communication lines open and maintain a stockpile of common sense, openness and flexibility.
- Assess the impact of actions. Evaluation of implementation process must be continuous, beginning with day one.

- Reformulate the strategy. Based on evaluation data, take a look at initial objectives and strategies and make changes as necessary.

Based on several years of research and development using other Center innovations as data sources, Career Education Implementation: A Handbook for Strategy Development includes three modules: 1) a procedural guide for career education advocates, 2) a workbook that enables advocates to test out their understanding of the process information, and 3) a description of the 30 alternative approaches to implementation, including the advantages and disadvantages of each.

PRODUCTS AVAILABLE: In addition to the handbook described above which is still in preparation, three monographs are available: The Adoption of Systems Innovations in Educational Organization: A Case Study of Operation Guidance; Identification of Empirical Dimensions of the Diffusion Process: Interim Report; and Perceived Effectiveness of Innovation Diffusion Tactics. Contact the developer for further information.

Contract No.: NE-C-00-3-0080 Funding: $355,503.

CAREER EDUCATION MEASUREMENT HANDBOOKS

Principal Investigator: N. L. McCaslin
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This project will provide five products to assist practitioners and developers of local career education programs to understand and improve their programs.

The products are:

1. A Handbook of Measures for Career Education Practitioners and Developers. The handbook will focus on locally developed and used measures.

2. A Handbook for the Improvement of Locally Devised Instruments and Measures.

3. A Handbook on the Utility and Use of Education Audit Techniques in Local Career Education Programs Accountability.

4. A Handbook on the Use and Collection of Qualitative Data for Local Career Education Program Assessment.

5. A Handbook on Useful Alternative Models of Assessment in Local Career Education Programs.

PRODUCT AVAILABLE: In progress.

Contract No.: NE-C-00-3-0079 Funding: $176,000.

CAREER PLANNING SUPPORT SYSTEM

Principal Investigator: Center for Vocational Education
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If the critics are right when they say high school career planning services are often too little, too disorganized and too late, there's help on the way.

A Career Planning Support System (CPSS) has been tested in 50 schools involving 51,000 students. Teachers, administrators and citizens in these sites know what their students need, how to help them and how to know if it's working.

Central to this system is involvement by everyone concerned. Committees are organized, needs and resources identified, goals and objectives spelled out and delivery options devised.

Yet the researchers discovered gaps that schools had trouble bridging for themselves. Hence, in addition to manuals on how to adopt the planning model:

- Career guidance methods for girls will emphasize the broad range of career options and career patterns for women available today and in the future.
- New guidance techniques for minority youth (historically neglected by overemphasis on white, middle-class college-bound Americans) will assure that adults who influence minority children are properly informed about educational and occupational opportunities. The idea is to provide influential adult models for those children who have none.
- Instead of handing students a diploma and saying "that's it," specific career guidance aids for all students will include job placement and followup programs, job seeking clinics and work entry courses.

One such instructional unit--called "Coping in the World of Work: Practice in Problem Solving"--puts each student in a role-playing, "in-basket" exercise and sociodrama-type activities to discover their own courses of action by solving simulated problems.

PRODUCTS AVAILABLE: Procedural guides due in early 1977. Related publications include: The Product Engineering of a System for Upgrading High School Career Planning Programs (Technical and General Reports, 1975); Career Guidance Materials: Implications for Women's Career Development (1974); Coping in the World of Work: Practice in Problem Solving (1976); Significant Others and Careers (1977); and Sugar and Spice Is Not the Answer: A Parent Handbook on the Career Implications of Sex Stereotyping (1977). Contact developer for further information.

Contract No.: NE-C-00-3-0079 Funding: $2,350,703.

MANAGEMENT INFORMATION SYSTEM FOR VOCATIONAL EDUCATION

Principal Investigator: Center for Vocational Education
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With millions of dollars flowing into vocational programs yearly, how do planners know they're meeting the right need at the right time and in the right place?

State and local vocational education agencies want up-to-date information daily. A system now being tested in the state of Colorado will help vocational administrators define these needs, update existing files and use that information easily. Using computer technology the agency already has, the system can be tied smoothly with other educational management information. Information a planning staff might need includes:

- staff data--credentials, years of experience, salaries
- program data--student characteristics, courses offered
- equipment and materials data--needs and costs
- facilities data--location and amount of use
- financial data--current costs, sources
- occupational demand data--Labor Department surveys.

How-to-do-it software materials are currently under refinement.

PRODUCTS AVAILABLE: System materials available after August 1976 includes five user documents load, edit and update computer programs; and field-trial assessment results. Associated publications already available include: Information Needs of State Directors of Vocational Education (1972); Information Needs of Local Administrators of Vocational Education (1972); Information Utilization by Vocational Educators, Utilization, Manpower and Follow-up Data: A Perspective for Local Vocational Education Planning (1973); Manpower Demand: Information Guidelines for Educational Vocational Education and Manpower Planning (1973); Linear Programming for Vocational Education Planning (1973 interim report); and A Manual for Conducting

Follow-up Surveys of Former Vocational Students (1975). Contact developer for availability.

Contract No.: NE-C-00-3-0076 Funding: $901,618.

EVALUATION OF THE EXECUTIVE HIGH SCHOOL INTERNSHIP PROGRAM

Principal Investigator: Gerald Walker
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The Executive High School Internship Program provides exploratory occupational experiences for high school students (primarily seniors) in mid- and high-level organizational settings. Students spend up to one semester observing and participating in the day-to-day responsibility of professional managers. Founded in 1971, EHIP has spread to over 25 school systems.

The major components of this NIE-sponsored evaluation of EHIP are an assessment of cognitive and affective aspects of student development, the role of the EHIP coordinator and the costs of establishing and maintaining a viable program.

It is expected that the final report can be used by local school officials contemplating adoption of EHIP and by decision makers interested in comparing the effectiveness of this program with other career exploration programs.

PRODUCT AVAILABLE: Study in progress.

Contract No.: NE-C-00-4-0012 Funding: $100,486.

IN-SCHOOL WORK EXPERIENCE

Principal Investigator: Norman Singer
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What is the state of current practice with respect to in-school career exploration programs? Such programs may take one of two forms--they may reproduce dimensions of the world of work within the school (e.g., day care center, building construction, shopping center, etc.) or use the wide range of occupational roles that naturally exist within a school system to provide career exploration opportunities.

The Center, in conjunction with an advisory panel, will perform four tasks: (1) develop an annotated listing of existing programs, (2) analyze the commonalities, gaps and problems within existing forms of in-school work experience programs, (3) examine the legal and institutional barriers to implementation of these programs, and (4) suggest several conceptual variations of in-school work experience programs that combine knowledge of exemplary existing practice with curriculum theory and research on adolescent and career development.

PRODUCT AVAILABLE: In progress.

Contract No.: NE-C-4-0012 Funding: $164,950.

NATIONAL CAREER EDUCATION FORUMS

Principal Investigator: Arthur Terry
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Invite local school people interested in career education to meet with researchers, developers and policymakers for three days and something good is bound to happen for all. At least the over 1000 persons attending NIE's 1975 and 1976 national forums on career education would agree that a nationwide view of ideas for immediate action and long-range planning was offered.

Held as a way for the Institute to hear about needs from the field, participants also got a firsthand look at research and development efforts designed to address their problems.

The first Forum, held in March 1975, at the Center for Vocational Education in Columbus, Ohio, featured papers on curriculum, guidance, work experience and placement which were later bound into a booklet titled Models of Career Education Programs. Another set of papers on implementation issues by local, state and federal career educators became a volume titled Planning and Implementing Career Education Programs: Perspectives. Yet a third volume that emerged from the first NIE Forum is titled Career Education 1975: A Contemporary Sampler. The latter is an idea book resource manual--a candid snapshot review--of 15 projects and what they've accomplished so far. Vignettes in this volume range from how the National Exploring Division of the Boy Scouts of America developed a unique career exploration program for young men and women ages 14-21 to a preview of the NIE-sponsored learning kit titled "Sex Fairness in Career Guidance."

The February 1976 Career Education Forum, held in Washington, D. C., used as its theme "School to Work--Work to School." Format resembled a major convention complete with keynote speakers, small group seminars, film showing and exhibits.

Reprints of presentations made by the following national leaders in career education are available as separate monographs:

- Grant Venn, Seeking an Administrative Commitment to Innovation

- Albert Quie, Education and Work: A Congressional Perspective
- Gene Bottoms, Fusing the Career Education Concept into the Fibre of the State Educational System
- William Pierce, Lifelong Education
- Harry Silberman, Systematic Issues in School to Work Transition
- Kenneth Komoski, Instruction Materials: Litmus Test of Career Education
- Harold Hodgkinson, A Research Agenda for the National Institute of Education
- Ken Hoyt, Setting the Record Straight: A Reply to Grubb and Lazerson

The 1977 Forum is scheduled for February 2-4 in San Francisco.

PRODUCTS AVAILABLE: Contact the Center for copies of 1975 and 1976 Forum publications cited above.

Contract No.: OEG-0-72-1419 Funding: $88,950.

OCCUPATIONAL EXPLORATION PROGRAM

Principal Investigator: Norman Singer
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Getting serious about a job in the 7th and 8th grade is probably too soon. But the fact is, junior high-aged students are eager to try on career roles for size. And they prefer to use games and easy-to-read, action-packed materials in the process.

To capture this natural energy and channel it creatively, classroom materials that will fit almost any subject area at the middle-school level have been developed.

The hope is that young people will keep all their options open. In the process, they should understand themselves better, see how academic skills are applied in the real world, get a feel for work responsibilities and learn how to investigate career choices.

Teachers call the shots in using the activities. Each simulation involves 6-10 students in sessions lasting 1-3 days each. Games, booklets, casettes and other audiovisual devices are provided--some for independent student use as well. Real problems requiring real solutions are simulated--like taking on the roles of educators in school year 2085 to understand the kinds of jobs and responsibilities that educators tomorrow may face.

Packages are developed or underway in the eight clusters. Units and sample jobs associated with each follow.

The Arts Cluster Package: scene designer, costume designer, free lance writer, recording engineer, band director, gallery director.

Construction and Manufacturing Cluster Package: carpenter, plumber, plasterer, architect, contractor, concrete mason, construction worker (this package must be implemented only in industrial arts classes because of safety and tool requirements).

Education Cluster Package: animal trainer, admissions officer, apprentice, film librarian, test developer, teacher's aide, superintendent.

Health and Welfare Cluster Package: inhalation therapist, dietician, lawyer, security guard, sanitarian, case worker.

Trade and Finance Cluster Package: insurance agent, truck driver, cashier, bank teller, title searcher, salesperson, investment counselor.

Transportation Cluster Package: air freight expediter, taxi driver, mail carrier, traffic control engineer, travel agent, estimator.

Natural Resources Cluster Package: (in process).

Communications Cluster Package: (in process).

PRODUCTS AVAILABLE: The eight packages listed above are now being reviewed by potential publishers. Contact the Center for status.

Contract No.: NE-C-00-4-0012 Funding: $1,116,727.

METHODS OF CURRICULUM CONTENT DERIVATION

Principal Investigator: Center for Vocational Education
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Skills vocational students need are often better learned on the job and not in schools, but finding out which should be taught where is seldom easy.

Jobs today are so complex and specialized that preparation programs must focus on skills that are clearly needed in that job. Guidelines are being developed in this project to help curriculum writers identify the content that is better learned in classrooms and laboratories than in the workplace.

Vocational programs should avoid teaching skills that:

- most students probably have already;
- could be better taught on the job;
- may require extensive job experience to master;
- differ from job situation to situation so much that no standard approach is possible;
- are needed only after site experience is obtained so that early skill acquisition might be forgotten.

Using a "task inventory" approach, the basic procedure is to separate the skills that are critical from those that are merely "nice to know." The assumption is that the people who are in the best position to report that information are those who perform and supervise the performance of those tasks--not outside consultants or library books.

User manuals developed by the project will cover the following topics:

- introduction to procedures
- how to write job task statement
- how to identify relevant job performance criteria
- how to derive performance requirements for training

- computer programs and technical information for processing survey data.

PRODUCTS AVAILABLE: Automotive Mechanics Occupational Performance Survey, Interim Report, 1973; Methodology to Assess the Content and Strategies of Affective and Descriptive Meaning Associated with the World of Work Environment, 1974; Procedures for Constructing and Using Task Inventories, 1973; Rating the Job Significance of Technical Concepts: An Application to Three Occupations, 1974; RCMAT: A Computer Program to Calculate a Measure of Associative Verbal Relatedness, 1975; Secretarial Science Occupational Survey, 1973; Occupational Survey Report of Business Data Programmers: Task Data from Workers and Supervisors Indicating Job Relevance and Training Criticalness, 1975; Occupational Survey Report on General Secretaries: Task Data from Workers and Supervisors Indicating Job Relevance and Training Criticalness, 1975; Occupational Survey Report on Automotive Mechanics: Task Data from Workers and Supervisors Indicating Job Relevance and Training Criticalness, 1975; Business Data Processing Occupational Performance Survey, Interim Report, 1973. Contact developer for availability.

Contract No.: NE-C-00-3-0078 Funding: $1,196,124.

PERFORMANCE-BASED VOCATIONAL TEACHER EDUCATION

Principal Investigator: Center for Vocational Education
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Efforts to improve the preparation and inservice development of vocational teachers in the early 1970's coincided with national interest in performance-based teacher education. A nationwide survey identified 384 skills required in successful vocational teaching, which were then shaped into 100 modules now being field tested at institutions of higher education in several states and one Canadian province. The program can be used for training teachers in any of the standard secondary and postsecondary vocational disciplines--agriculture, business and office education, distributive education, health occupations, home economics, technical and trade and industrial education.

As in other performance-based teacher education programs, certain essential characteristics stand out in this project:

- Competencies are stated as skills that can be demonstrated.
- Criteria for assessing the competencies are specified at the outset.
- Students are asked to self-evaluate continuously.
- Evidence of success is based on actual teaching performance.
- Rate of progress is not timebound.
- Instruction is individualized and personalized.
- Feedback is sought and given at every step.
- The process is systematized with a definite sequence of activities.
- Emphasis is on outcomes, not prerequisites, and credit for skills acquired earlier is given.
- Instruction is modularized.
- Students are held accountable for their own performance.

The Performance-Based Vocational Teacher Education (PBVTE), developed by the Center for Vocational Education (CVE), calls for the candidate to work with a resource person--e.g., professor--on acquisition of competencies in the following domains: Program Planning, Development and Evaluation (11 modules), Instructional Planning (6), Instructional Execution (29), Instructional Evaluation (6), Instructional Management (9), Guidance (5), School-Community Relations (10), Student Vocational Organizations (6), Professional Role and Development (8), Coordination (10).

Students are always required to demonstrate skills in actual school situations with options for simulation provided in advance. Supplementary reading and learning activities are provided or suggested in each module. A resource center is recommended where students can work on certain activities together and have access to support materials and media. Options are suggested for use of community resources, too--such as testing oral presentation skills with a 4-H group or in an evening adult education course.

The amount of academic credit to be given is a local option. Student time required to complete each module ranges from five to thirty hours.

Anticipated products funded by NIE include the 100 modules with a master list of competencies, a resource person guide, a student guide and an overview slide-tape. Other products of a related nature are being developed under separate USOE contracts.

PRODUCTS AVAILABLE: Contact the Center for listing of available materials.

Contract No.: NE-C-00-3-0077 Funding: $1,679,638.

THE SCHOOL-BASED COMPREHENSIVE CAREER EDUCATION MODEL (CCEM)

Principal Investigator: Center for Vocational Education
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With millions of students in 18,000 public and private school systems facing career decisions today or tomorrow, band-aid programs for a few youngsters here and there won't be enough. Larger-scale and longer-range solutions are needed.

The Comprehensive Career Education Model (CCEM) is a system-wide plan that shows how to modify present curriculum from kindergarten through high school so youngsters are exposed to career-related activities each year they're in school.

After four years of development and refinement, materials are ready for school districts wanting to try it for themselves.

Key to the concept is infusion--helping teachers blend career education objectives into regular instruction so that students see how the things learned in school fit the real world they'll soon be entering.

Helping build and test the model were thousands of students, staff, parents and community people in six forward-looking school systems: Los Angeles, California; Hackensack, New Jersey; Atlanta, Georgia; Jefferson County, Colorado; Pontiac, Michigan and Mesa, Arizona.

What will students know as a result of K-12 activities in career education? More about themselves, their career options and their role in a work-oriented society. They should learn employability skills such as self-initiative and resourcefulness, and be able to define a career path that often requires more preparation after graduation.

The system was designed around theories of child growth and career development, ideas about survival skills for adult living, and criterion-referenced school objectives were included. Teachers use eight goal areas as their reference point and can modify 29 instructional guides* to fit student

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*Another 61 teacher guides developed as part of the CCEM project are being field tested by American Institute for Research (AIR) under a separate contract.

objectives, depending on the subject matter at hand. Staff development is central to CCEM, with guides available for all grades and levels--and for administrators, too. Community involvement ideas are also suggested.

PRODUCTS AVAILABLE: Contact the Center for extensive listing of materials mentioned above.

Contract No.: OEG-0-72-1419 Funding: $7,500,000 - cumulative.
$3,700,000 - NIE.

STUDY OF TRANSFERABLE SKILLS

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Over 11 million people changed occupations or employers during a recent 12-month period. What skills will help students when they move to another job--whether voluntarily or not? This project is studying patterns of occupational mobility in hopes of identifying skills that can be easily learned and transferred from one job to another. Examples include basic communication skills, technical skills, decision-making skills, planning skills and interpersonal skills.

A second project objective is to describe occupational mobility data sources with an eye toward determining the need for future job-transfer skills studies. Identifying the range of classification systems useful in occupational mobility analysis is the third goal of the project.

Three papers and a series of workshops will bring together information from researchers, labor unions, business and industry about the kinds of transferable skills used in the marketplace, assessment of their importance and the role of education in providing training in these skills. Project staff will visit training and retraining programs to see how present practices take into account the training of transferable skills.

Expected outcomes include improvements in the design of school transcripts and catalogs, employer records, job applications and counseling materials.

PRODUCTS AVAILABLE: Under development.

Contract No.: NE-C-00-3-0078 Funding: $292,600.

A CRITICAL SURVEY, REVIEW AND SYNTHESIS OF RESEARCH ON CURRICULUM IMPLEMENTATION

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Even though elements of career education have been around a long time, it represents a new approach to doing things in schools. Some of the ideas require teachers to change familiar patterns. Some research has been conducted on how implementation occurs once the decision has been made to adapt an idea at the local level. Most people "pushing" a new program for schools have a product they want installed in toto and overlook the needs, interests, and participation of students, parents and teachers in shaping the innovation to fit local conditions. Here's what the research literature from the U.S.A., Canada and Great Britain says along with policy implications. An excellent bibliography on change processes is indicated. Fullan and Pomfret's review suggests these "do's and don'ts" for career educators:

- Deal with conflict constructively and be prepared to negotiate. Conflict is inevitable and can be healthy.
- Teachers consistently have one set of expectations and administrators/school boards another. Since teachers are the key users in the long run, secure their active participation early.
- Students and parents should be involved in deciding goals and means of implementation.
- Make sure the program is backed up by time, materials and feedback from the very beginning.
- Identify roadblocks early and know how you'll respond in advance.
- Start the program in a school building that has strong leadership, faculty support, clear decision-making patterns and is receptive to inservice training.
- If a number of "outside" actors are involved (county, state, federal agencies, etc.),

likelihood of success decreases. Such political complexity makes coordination vital.

- Planning for implementation is a must before operation begins, including time for teachers to plan their own training.

- Planners should be wary of producing materials and other curriculum products and should concentrade more on how others (users) can be involved in such a process before and during initial implementation.

- Implementation will be more durable over time if staff helps decide on it in the first place. If that's impossible, get staff involved in planning the implementation process.

- Everybody should know who's going to be doing what, to whom, how--and why. As staff gain experience in implementation, roles will change naturally. A too-rigid and complex system will alienate staff.

- Avoid being too explicit about the innovation, but plan for increasing explicitness during the process. Don't be surprised if you wind up with an innovation different than the one you started to implement. That's natural. Planned variation can be useful.

- Evaluation, particularly in the beginning, should emphasize information that will help make implementation better rather than judging success or failure. While research is important, exhaustive data gathering can overburden students and staff alike. Try using case studies.

- Don't generalize evaluation findings from one implementation site to another.

- It's easier to measure the degree of implementation of a program or idea than it is to measure student outcomes.

PRODUCT AVAILABLE: Review of Research on Curriculum Implementation. Contact authors for availability.

Contract No.: NIE-P-74-0122 Funding: $2,000.

CAREER INTERN PROGRAM

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Alternative schools fade in and out, but this one is succeeding and growing, according to staff and students. The Urban Career Education Center (UCEC), in an inner-city Philadelphia neighborhood, offers its interns a different route to a Board of Education-validated high school diploma. Here 200-plus dropouts and potential dropouts from traditional 10th, 11th, or 12th grades are becoming winners in a program which combines career investigation, counseling and basic academic skills with lots of individual attention, support and community and parent involvement. This successful combination is the result of years of hard work by the Opportunities Industrialization Centers of America. OIC/A, USOE and NIE have supported the Philadelphia UCEC program, an outgrowth of OIC/A's experience in serving adult men and women needing skill training to better their employment situations.

Recruitment of interns includes referrals from city high school counselors. Once accepted the interns enter Phase I, a 21-week career awareness program designed to help them see the variety of careers open to them. This phase includes classes in English, math, social studies and science which use non-traditional teaching strategies to pinpoint academically weak areas. Instruction is keyed to the working world, showing interns how each discipline relates to occupations. A low intern/staff ratio assures individual attention, backed up by weekly intern/counselor meetings and career counseling seminars. At the end of Phase I, progress and goals are assessed.

Phase II provides up to four semesters of hands-on, fused academic/career education including two week-long career experiences aimed at testing interns' interests and providing a realistic perspective of demands and rewards of the jobs they explore. In addition to hands-on exposure, Phase II stresses individualized instruction and independent study. Advanced courses in the disciplines previously mentioned ensue. UCEC keeps in close touch with Philadelphia's businesses, industries and community service agencies in addition to ongoing communication with interns and their parents.

Success in Phase II opens the door to Phase III, when interns concentrate fully on achieving their post UCEC goals, whether college, on-the-job training, skills training or employment.

Results of Phase III dictate whether the intern successfully completes regular high school graduation or GED requirements. Interns who choose vocational or on-the-job training are assisted by their counselors for six months, college-bound interns for a full year after leaving UCEC.

What advice does UCEC give to other interested cities? At halftime in its program development, UCEC says: Remember at the outset that the process of change or development takes time. Written program plans should be viewed as tentative ideas to be tried out and changed on the basis of goals and experience. The intent to experiment is not sufficient to guarantee that experimentation will take place. Tradition dies hard. The expectations of the Career Intern Program are different from those of the typical high school. A new program must provide alternative structures (inservice workshops, new curriculum materials, appropriate schedules and so on) which will enable staff to meet those expectations.

The final report is in progress.

PRODUCTS AVAILABLE: Interim Report: Career Intern Program, Volumes I and II. Contact NIE for availability. The final report will be available from NIE in early 1977.

Contract No.: NE-C-00-3-0122 Funding: $2,919,563.

STUDY OF EDUCATIONAL LEAVE PROGRAMS IN EUROPE

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The practice of allowing workers a leave of absence from their jobs to go back to school will have to have some bugs ironed out before its full potential can be realized.

A number of European countries acknowledge "the right to education" for all workers and make legal provision for educational leave programs under the conditions that 1) workers be paid for the time they are in the classroom, 2) they must be assured they will still have a job when they return, and 3) employment benefits must continue.

The purpose for granting most educational leaves is to provide equal educational opportunities for all workers. In theory, beautiful; in fact, difficult to achieve.

First, based on European experience in nine countries, it appears that educational leave may result in more inequality rather than less. In Europe, people already highly skilled have displayed the greatest motivation for furthering their education. In practice, a very small percentage of the working population has taken advantage of the numerous opportunities for educational leave offered. Apparently if less-skilled workers are to be brought up to par with the skilled, they will have to be offered incentives for taking advantage of the leave opportunities that already exist.

Educational leave provisions are also based on the notion that more education will result in one's being better qualified for one's job. In many cases, however, the training available is not tied in any definite way to the skills required for the job a worker holds or aspires to hold.

Closely related is the hope that more education will lead to job advancement. The realities of most work places preclude any guarantee of immediate upward mobility upon completion of skill training. Yet many people take educational leaves specifically for the purpose of "bettering themselves." This situation produces considerable dissatisfaction with the status quo--a problem which ultimately could result in a need

for companies to change their operations entirely to provide all workers with more varied tasks and more active roles in decision making.

One strength of the European system, which is not found in its American counterpart, is the close working relationship of industry, government, and labor in planning and supporting educational leave programs. Interestingly enough, European educators get into the act only after planning has been carried out quite thoroughly by the other three sectors.

PRODUCT AVAILABLE: Developments in Educational Leave of Absence. Contact OECD Publications Center, Suite 1207, 1750 Pennsylvania Avenue, N.W., Washington, D. C. 20006 for availability. In addition, Herbert A. Levine, Director of the Labor Education Center at Rutgers University, has abstracted the OECD report and adapted it to American conditions. His findings will be published as NIE Papers in Education and Work Number Six: Paid Educational Leave: A Practical Way to Relate Work and Education and an Effective Way to Implement Life-Long Learning, available from NIE in December 1976.

Contract No.: NIE-C-74-0106 Funding: $32,000.

A POLICY STUDY IN EDUCATION AND WORK: UNDEREMPLOYMENT

Principal Investigators: Gerald P. Glyde, David L. Snyder and Antony R. Sternberger
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Telling young people that it's important to get a college education is becomming as passe as pleated skirts and hula hoops. Should it?

With all the publicity about the trouble college graduates are having getting "good" jobs, this study takes a closer look at the reasons why many people are calling our population overeducated or underemployed--i.e., overqualified for the jobs they are able to get.

Startlingly, they found that most people, including employers, are using the years of education completed as a measure of one's ability to do a job. At the same time, they are saying that a job requires attainment at least equal to--and increasingly, surpassing--that of the people now doing the job.

The study seriously questions how good these recommendations are and the widsom of the advice that students are given. At this time, unfortunately, counselors, researchers, public officials and parents do not have alternative ways of establishing job requirements based on skill competencies as well as educational achievements.

To improve the advice we give young people, the study suggests several activities:

- Trace the mobility of workers between occupations and use this knowledge to identify the most flexible types of skills and education.
- Improve manpower forecasting--concentrating on the real educational and skill requirements of jobs--and get the information to the people who need it through an improved employment service and better cooperation between manpower planners and educators.
- Study the ways formal education, ability and on-the-job training <u>really</u> relate to careers.

- Provide high-quality part-time work so that people who cannot work full-time do not gradually lose their job skills.

PRODUCT AVAILABLE: Underemployment: Definition, Courses, and Measurement (final report). Contact authors for availability. Also available from ERIC (No. ED107862).

Contract No.: NIE-C-74-0137 Funding: $32,521.

EVALUATION OF THE COMPREHENSIVE CAREER EDUCATION MODEL

Principal Investigator: Henry Brickell
POLICY STUDIES IN EDUCATION
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New York, New York 10017

Give people the chance to try career education on for size and they'll like the way it looks and fits.

That's the overriding conclusion of Brickell and associates who followed the multi-year development of CCEM (the Comprehensive Career Education Model). What do people in the six test communities think? Career education does make a difference in their lives--particularly among teachers and students who are involved in it day by day.

Brickell's study--including one report titled Attitudes Toward Career Education (October 1973)--shows that students welcome career education activities because they give a dose of reality to learning. Teachers, too, are convinced of the value of career education once they're involved. Parents are favorable, yet some parents question whether it's right to grant credit for work experience youngsters receive in the community, and wonder if weaving career education into the regular curriculum is better than maintaining separate courses. Brickell believes, however, that if staff can show parents and community people that nothing is being lost by the infusion of career education, career education should be accepted.

Brickell sounds one note of caution about the high marks that persons in the six developmental sites gave to CCEM: Their favorable attitudes could have been influenced by the fact that these communities were in on the ground floor of a national priority and received substantial publicity, federal support and professional assistance from the Center for Vocational Education.

The six school districts who helped build CCEM learned some useful things that older communities should know. Four findings noted by Brickell stand out:

- Even though you need local career education advocates whose ideas are respected, it's also important to have administrators who really believe career education must happen. Use of outside experts also helps.

- Staff prefer flexible materials from other sources as a starting point for building their own.

- Teachers will not use community resources without assistance.

- Formal evaluation may not be essential, partly because some career education outcomes--such as "self-understanding"--are difficult to measure.

A separate report developed by this contract called Data for Decisions (March 1974), asks the question, "Who really needs to know what evaluation information on programs like these--and when do they need it?" In large Federal projects like CCEM, says Brickell, everybody naturally wants evaluation information as soon as possible. What people need to know depends on how far up the line the decision maker sits. A general rule of thumb offered to evaluators by Brickell: Write a one-sentence summary, a one-page summary, and a ten-page summary based on your 100 pages of findings. Then, put yourself in the shoes of the person who is to read it in order to see which version provides the essential facts needed at that particular time.

Another special report titled "A Review of the Developmental Program Goals for the Comprehensive Career Education Model" (August 1973) illustrates the continuing debate over career education as a concept. Brickell's staff assembled two blue-ribbon panels of "outsiders" to examine a set of over 1,000 goals that shaped the design of CCEM and that are still used in career education efforts today. College professors and curriculum experts generally agreed the goals were too ambitious and ill-conceived ("over reach, over-promise, and over-kill" said one) while state legislators, university leaders, local school board members and superintendents, employers and teachers generally thought it was about time such outcomes were addressed despite the difficulties. The report does not contain the actual goals but summarizes reviewer responses.

PRODUCTS AVAILABLE: Profiles of CCEM Locations; A Review of the Developmental Program Goals for the Comprehensive Career Education Model; Attitudes Toward Career Education; Data for Decisions. Contact author for availability.

Contract No.: NE-C-00-3-0054 Funding: $359,827.

THE DEVELOPMENT OF CAREER CHOICES BY BOYS AND GIRLS

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with
Grace Baruch
THE WORCESTER FOUNDATION FOR
EXPERIMENTAL BIOLOGY

Listen to preschool kids in the sandbox and they'll tell you which jobs are right for men and women. By the time they get to elementary school, boys aim at 2-3 times as many career possibilities as girls, most of whom already limit their roles to teachers and nurses.

At the high school and post-high school level, sex continues to have a strong influence on the choice of occupations. For example, senior girls ranked "helping others" as first priority in choosing an occupation; senior boys placed status and power first. Similarly males show increased interest in high prestige positions while females consistently rejected these occupations.

During early years, race and social status seem to have little impact on the goals of young children. Their occupational aspirations remained equally high, with one noticeable difference--black girls seldom selected housewife as a life choice.

Studies on the effect of race during the high school years proved to be inconsistent. Most researchers found that black students were not substantially different from white students in their aspirations or expectations. But at college entry, black students were found to hold considerably higher aspirations than their white counterparts, with black females expressing higher goals than any other group studied.

Differences created by social class appear relatively late in children, but once established, they affect choice of schooling and occupation. Lower socioeconomic status students were less likely to enter graduate school. Of those who do enter, few seek high-status careers like law or medicine. Another study also found that sons of low-status whites tend to move to higher-status positions. Offspring of high-status whites stay in high-status positions. However, among black men low-status jobs are the norm, and even blacks from "better" backgrounds tend to fall back to lower-status occupations.

How do parents affect career choice? Fathers' occupations weigh heavily on their sons' decisions. Mothers' occupational attitudes, on the other hand, have greater impact on their daughters' career plans than the mothers' actual occupations.

Role models help build aspirations, too. One study found using videotapes of career women far more effective in raising female horizons than discussion and role-playing techniques.

Little research, however, has been done to relate this information to counseling techniques. Instead of more counseling, say the authors, the need is for more effective counseling. That may suggest programs to help parents to use their influence on their children's career choices more creatively. For schools, "try using more diverse role models to overcome the limiting effects of sex, race and social class."

PRODUCT AVAILABLE: Occupational and Educational Aspirations and Expectations: A Review of Empirical Literature, 1974. Contact principal investigator for availability.

Contract No.: NIE-C-74-0016 Funding: $4,440.

A HISTORY OF ADULT DEGREE PROGRAMS, 1945-1970

Principal Investigator: James C. Hall
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Adults are returning to U.S. campuses in increasing numbers. How has higher education responded to the demands placed on it by mature learners?

After looking at the British and American roots of degree programs for adults, Hall describes how U.S. colleges and universities developed special baccalaureate programs. The two world wars created a need for large numbers of trained people. Evening and extension programs sprouted during the 1950's as enrollment swelled.

While the G.I. Bill made it possible for veterans to pursue college degrees, it also highlighted the differences between adult and adolescent students. The learning which veterans could demonstrate upon their return from military service encouraged institutions to experiment with credit for life experience.

Hall selected eight programs which as a group form a bridge between the extension degree programs of the early 1900's and the nontraditional assessment programs of the 1970's and beyond. Two approaches to the curriculum design of special baccalaureate programs have emerged.

One set of programs--Brooklyn College, Queens College, Mundelein College and Roosevelt University--relied on existing courses for their curriculum. The other set of programs --University of Oklahoma, Syracuse University, Goddard College and University of South Florida--created curricula which departed substantially from what already existed and were delivered to students through independent study.

There were problems during those early years--funding, fluctuating enrollment and concerns of traditionalists. In the mid-1970's, some of these problems still require more work. But, Hall concludes, the efforts of special adult programs have helped create a more favorable climate for the adult student on U.S. college campuses.

PRODUCT AVAILABLE: A History of Baccalaureate Programs for Adults, 1945-1970. Available from ERIC (No. ED101-607).

Contract No.: NE-G-00-3-0199 Funding: $9,997.

HISTORICAL STUDIES IN PAID EDUCATIONAL LEAVE

Principal Investigator: Herbert A. Levine
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Laws in other nations may be able to teach the United States something about how our own paid educational leave programs might be designed.

Accordingly, in 1974, the National Institute of Education commissioned three papers on paid educational leave programs in Western Europe. They were:

1. Review and Analysis of the Industrial Training Act of 1964 in the United Kingdom, by P. J. C. Perry, British Association for Commercial and Industrial Education.

2. Review and Analysis of the West German Law of 1969, by Dr. Hedwig Rudolph.

3. Review and Analysis of the French Act of July 16, 1971, by Jean-Pierre Clerc of Le Monde.

Drawing on these works (all of them available from ERIC) and his own studies, Levine finds that just as the United States and Europe have similar domestic problems--the gulf between the worlds of work and education for instance--the solutions to these problems may also be similar.

Educational systems in both the U.S. and Europe neglect the education of adult workers of all ages. The result: A waste of human resources. While an economic crisis may force a nation to recognize that workers are undereducated, most countries don't take corrective action, citing the economic crisis itself as the reason why nothing can be done. Another complicating factor is that existing resources supporting the concept of paid educational leave and continuing education opportunities for workers and families are seriously underused, although collective bargaining agreements provides for such opportunities. Legislation, educational programs and union- or management-sponsored training efforts aren't coordinated either. Those most deprived by these failures are workers whose taxes support the very systems which fail them, creating the potential for taxpayer revolt against public educational systems.

How can these problems be resolved? The European countries' experiences point out that a significant element in the adoption of helpful national or regional education legislation is early involvement of labor and management. All potential contributors to such programs--labor unions, management, formal educational systems and government--must join together at the outset to forge cooperative, constructive and mutually supportive coordination.

What's needed by every country? A national body integrated with state, local and private agencies to advocate and coordinate paid educational leave and continuing education/work programs. Beneficiaries of these efforts should be workers and families, and ultimately the national and international economy. Such an agency could focus priorities on research and financial assistance required to enhance educational opportunities. It could also help develop more effective relationships between the worlds of labor, management and education, taking advantage of "down times" to educate the workforce, for example.

Career educationists will agree that education and work must share responsibility for bridging gaps between the two areas. Efforts to help individuals take advantage of existing programs must be supported by schools, unionists, management and government alike if they are to succeed.

PRODUCT AVAILABLE: Strategies for the Application of Foreign Legislation on Paid Educational Leave to the United States Scene. Available through ERIC (No. ED106517).

Contract No.: NIE-C-74-0107 Funding: $10,500

ISSUES OF SEX BIAS AND SEX FAIRNESS IN CAREER INTEREST INVENTORIES

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Achieving education and occupational equity for men and women has been a major concern of educational and governmental agencies. Title IV regulations prohibit the use of sex-biased materials, tests and practices in guidance and counseling. The regulations do not define what is sex fair and what is sex-biased, however. That remains a controversial matter, particularly with regard to interest inventory construction and interpretation.

The National Institute of Education in March 1974 sponsored a workshop to examine some of the issues in sex-biased interest testing. Participants were key people in test development and publishing, counseling, professional education associations and government. The products developed from the workshop were the Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories (10 pages) and Issues of Sex Bias and Sex Fairness in Career Interest Measurement (219 pages).

The latter includes 11 commissioned papers which formed the technical background on which the Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories were developed. All this is part of a number of NIE-funded activities, analyses and products intended to help develop some criteria for sex-fair career counseling tests and practices.

A central purpose of the workshop was to increase sensitivity to sex bias issues so that those who help youth and adults make career decisions will be aware of all sides of the question. The 11 papers point out the various factors which contribute to sex stereotyping--early socialization, parents' attitudes, teachers' attitudes, school curriculum, the media, counselors' own biases and overall social attitudes. Collectively, the papers provide a good overview of the problems and costs to be faced in developing sex-fair materials.

As supplementary reading for pre-service and in-service counselor training, as a reference tool for tests and text

developers and as a text for graduate-level measurement courses, the collected papers are a must.

PRODUCT AVAILABLE: Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories and Issues of Sex Fairness in Career Interest Measurement. Both are available from the Education and Work Group, National Institude of Education, Washington, D. C. 20208. A companion volume, Readings in Issues of Sex Bias and Sex Fairness in Career Interest Inventories, will be published in Spring 1977.

Contract No.: NIE-C-74-0101 Funding: $47,099.
NIE-C-30-0060

THE INFLUENCE OF SEX ROLES AND COGNITIVE STYLES ON THE CAREER DECISION MAKING OF COLLEGE MEN AND WOMEN

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The primary objective of this research is to determine the effects of sex role attitudes and cognitive styles on the career decision-making process. The secondary objective is to develop guidelines and outlines for career decision-making training programs, designed to increase the career options and career decision-making competency of men and women. These guidelines will incorporate information obtained in accomplishing the primary objective.

In recent years, there has been a greater awareness of the influence of sex roles on human behavior in general and career-related decisions in particular. Attitudes regarding the sex role appropriate behavior of women and men are gradually changing. Changes in sex role attitudes can have an important influence on the career decision-making of both women and men. However, the influence of sex role attitudes on career decision-making may not be direct. Recent research indicates that it may be mediated by differences in cognitive style. That is, the way in which women and men perceive, interpret, and respond to their environment may more directly influence their career decision-making than sex role attitudes. Finally, because sex role attitudes are changing, they may have a greater influence on career decision-making than gender, that is, being female or male. Thus, this project will determine the relative influence of sex, sex role attitudes, and cognitive styles on the career decision-making of college women and men.

It is expected that a greater understanding of the career decision-making process will accrue from this research. Furthermore, how career decision-making is influenced by sex roles and cognitive styles should be clarified. Finally, the career decision-making training programs should provide a method whereby educators and counselors can translate these results into programs of benefit to college men and women.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0079 Funding: $143,011.

CAREER EDUCATION CURRICULUM IMPLEMENTATION IN SIX SCHOOL DISTRICTS

Principal Investigator: Carl Rittenhouse
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After big doses of Federal money are gone, what heppens in local districts where the original ideas took hold? For the six school districts involved in developing the Comprehensive Career Education Model (CCEM), the blessings were mixed--yet everybody learned something. Among the highlights noted so far are:

- Creative curriculum development in career education is slow, expensive and demands top local talent.
- Career education leaders cannot isolate themselves in offices or behind memos; they must meet teachers face-to-face.
- Secondary schools still lag behind the elementary grades in the delivery of career education--particularly "academic" teachers whose priority on content mastery means they seldom point out how their subject matter is used in career situations.
- Teachers will feel better about career education if they have a hand in creating their own adaptations.
- Hands-on experience for all students in community work places remains an unfulfilled objective.
- If local taxpayers back them to the wall, school officials are not yet ready to guarantee whether career education outcomes are being reached.
- The six school districts needed more time (but probably the same amount of money) to implement CCEM more effectively.

This study--still in progress--builds from previous evaluation work conducted during the design and development phase of CCEM. A prime subcontractor for this study on implementation is Policy Studies in Education which was responsible for the earlier evaluation.

PRODUCTS AVAILABLE: Study in progress.

Contract No.: NIE-C-74-0105 Funding: $205,657.

STATEWIDE COMMUNITY SUPPORT MECHANISM

Principal Investigator: Richard R. Lutz
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STATE OF WASHINGTON
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While most career educators just talk about greater use of community resources--both on and off the school campus--the State of Washington is trying to make sure it happens from the top corporate levels on down.

A 21-member statewide task force of business people, labor leaders and educators met monthly during school year 1975-76 to build a comprehensive support system that will open new doors for school/community cooperation.

The first big step in shaping state-level support was a mail survey of public and private associations, agencies, companies and organizations whose employees and members work in more than one geographic area (for instance, a timber company or bank with regional operations or branches). Positive responses were fed into an Evergreen Pages directory that will serve as a guide for local schools in contacting nearby firms and offices whose headquarters have given the green light to career education participation.

Just identifying the potential role of state-level organizations (all kinds of business, industry, labor and the professions) was not enough, however. Each community--from metropolitan Seattle to rural Sequim--has a unique variety of resources available for the asking. Task force members soon discovered their counterparts at the local level had other concerns:

- Teachers complained they didn't know how career education using community resources could really fit into an already crowded curriculum, how to contact resource persons, how to prepare resource persons for each activity or how to evaluate the experiences.
- Administrators didn't know how to regulate the system so the right resources were linked up with the right students at the right time.
- Most of all, community resource persons said they had never understood exactly what they were supposed to do when talking to a group of students--especially

now that they were to put more emphasis on the career relevance of firefighting and less on how many gallons of water the engine pumps per minute.

Prototype materials developed in the project include:

- Community Resource Coordinator's Guide, suggesting how a local resource system might be operated;
- Teacher's Guide, including subject area planning sheets for how to use community resources to meet career education objectives;
- Evergreen Pages, a statewide listing of organizations by cluster;
- Community Resource Person's Guide, a handbook for laypeople volunteering their time and talent.

PRODUCTS AVAILABLE: Prototype community support materials still under field test.

Contract No.: 400-75-0041 Funding: $100,000.

TOWARD A TEMPORAL SEQUENCE OF EDUCATIONAL ATTAINMENT--CAREER CONTINGENCIES OF YOUTH: THE FIRST THREE POST HIGH SCHOOL YEARS

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Community college enrollment in the U.S. is increasing at a considerably faster rate than four-year colleges and universities. Postsecondary students are responding enthusiastically to the community college alternative--absence of admission requirements, availability of vocational training programs with the "promise" of a good job, low cost and transfer programs with ready access to four-year colleges. Yet, the effect of a two-year college program on career aspirations, future employability and student personal development remains undetermined. The characteristics of the two-year college students versus students who terminate their educations at high school or enter a four-year college program are still not clearly understood.

This project tries to answer some of these questions by developing a profile of a typical two-year college student. In a selected sample of approximately 2800 high school seniors, the researchers compared characteristics of individuals entering community college, four-year college and those terminating their formal education. Although data analysis and summary of implications is still underway, an interim report outlines some preliminary findings. For example, the decision to attend a community college is usually made later in the high school years than the decision to enroll in a four-year college. Often the decision has the characteristics of a compromise. Furthermore, once enrolled in the two-year program, students may find it necessary to drop in and out several times before completing or terminating their programs.

This interruption of education, for reasons as yet unspecified, results in prolonging the time needed to complete any particular training or degree.

These and other related observations are contributing to a more complete picture of two-year college students and the community college's effect on their career attainments and further educational development.

PRODUCTS AVAILABLE: The final report will be published by NIE in early 1977.

Contract No.: NE-G-00-3-0217 Funding: $27,639.

HISTORY OF RESEARCH AND DEVELOPMENT IMPLEMENTATION: MOUNTAIN PLAINS

Principal Investigator: Steven Porter
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The Mountain Plains Education and Economic Development Program for disadvantaged rural families (see abstract under that heading above) was and is a pioneering effort to solve rural poverty.

Because of its uniqueness, the historical record of Mountain Plains' accomplishments, as well as a scientific evaluation of its outcomes, should be made a matter of public record.

To this end, the Education and Work Group has commissioned a study of the decision-making process that created and sustained the program. The study will describe step-by-step the many social and political forces which converged to influence the program's development. The history will be an objective account of how several persons of integrity representing various organizational, political and social interests worked together to serve the needs of rural poor families.

The final product will be a book suitable for paperback publication.

PRODUCT AVAILABLE: In progress.

Contract No.: 400-76-0148 Funding: $22,280.

THE VOCATIONAL CHOICE PROCESS OF NONPROFESSIONAL, NONMANAGERIAL WORKERS

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College education may not be the key to a good job these days, and for some youth, choosing not to go to college looks more promising than going.

However, little information is presently available to help students and blue-collar workers to select occupations and plan careers that require little or no further educational training. Even less is known about the vocational choice process of nonprofessional workers and the role that chance and environmental factors play in their decision making.

Many vocational theories emphasize the major role of the individual's person characteristics or self-concept. Often these theories exclude a consideration of how external influences--being in the right place at the right time, socioeconomic status and job realities--transform ideals into realities. Nonprofessional workers often do not have the resources, the training opportunities or the experiences to be as much a master of their fate as some theories presume.

To determine what does happen to nonprofessional workers--what influences their decisions--this study is applying Holland's theory of vocational choice to 925 nonprofessional, nonmanagerical men and women.

Do these individuals in fact seek out environments which satisfy their orientation and needs? Are certain personality types actually more satisfied in what Holland describes as complementary work groups?

The research now in progress is asking workers to describe their work histories, indicating what internal and external forces influenced their occupational choices. From this should come a much better picture of how nonprofessionals make vocational decisions and how counselors can help non-college-bound youth make plans for the future.

PRODUCTS AVAILABLE: A Review of Holland's Theory and the Sociological Theories; Strategies for Increasing Response Roles to Mailed Questionnaires; and Research Phase: Revised and Operationalized. Contact Paul Salomone for availability.

Contract No.: NE-G-00-3-0203 Funding: $132,848.

A FACILITIES HANDBOOK FOR CAREER EDUCATION

Principal Investigator: SYSTEM DEVELOPMENT CORPORATION
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Santa Monica, California 90406

Could a run-down, abandoned old store front building regain a happy, useful and exciting life? Yes--as a career education facility.

In 21 career education programs around the country, effective activities are operating out of facilities as diverse as the projects which inspired them. The handbook shows how administrators can create environments for career education and how community resources can be utilized effectively.

The floor plans, photographs and descriptions in this book demonstrate how school staff imagination and commitment can create an auto repair training center or a mobile model of a loan company office. In Gig Harbor, Washington, elementary school children learn horticultural skills in the World of Work Greenhouse. In Bowling Green, Kentucky, students' career education activities are integrated with other studies--every subject is made relevant to the world of work and no special facilities are required.

All this suggests that the goals and characteristics of career education have implications for physical settings. An active learning process geared to the real world must provide opportunities for students in diverse environments inside and outside the school. Adequate planning to ensure a variety of options for students is most important, say the authors. A facility need not be expensive or lavishly equipped. It may be a modified classroom or a network of placement locations in the community, but what it is must be determined through a well-organized planning process.

Three programming/planning process models are described--the Charette, the Generic Planning Model and the CRS model (developed by the firm of Caudill, Rowlett and Scott). Each model emphasizes broad community involvement. The Generic Planning Model and CRS identify several steps to "problem seeking." Among these are: 1) goal development, 2) needs assessment, 3) problem analysis, 4) generation of alternatives, 5) selection of policies/programs, 6) implementation and 7) evaluation.

What comes through clearly in this practical publication is that there is no single formula or facility that will work

in all schools. Local school people and their communities need to carefully explore, plan and develop facilities according to local needs and resources. This book provides a broad perspective on 21 of many possible solutions.

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 2: A Facilities Handbook for Career Education. Contact NIE for availability.

Contract No.: NIE-C-74-0143 Funding: $88,029.

FACTORS WHICH INFLUENCE THE CAREER DECISION-MAKING PROCESS

Principal Investigator: Arthur G. Cosby
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This research proposes to assess the career decision-making processes among rural youth in the Deep South. The first focus is on the development of a process model that combines the perspectives of "status attainment theory" from sociology and "developmental theory" from psychology. Such a model portrays a process beginning with parental indicators of social origins, which are seen as affecting significant other influences (SOI). Social origins and SOI are then hypothesized to impact both upon adolescent career preferences and career-related preferences. These influences are subsequently examined for their effects upon early adult behavior. The model output is the consequential formation of early adult and career-related preferences.

The second focus of the study is a race and sex comparison of career decision making.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0072 Funding: $72,252.

SEX AS A FACTOR INFLUENCING CAREER RECOMMENDATIONS OF PUBLIC SCHOOL GUIDANCE COUNSELORS

Principal Investigators: David L. Klemmack
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Are school counselors likely to steer girls to typically female careers and boys to male-type professions? This survey of 687 public school guidance workers shows they did exactly that. When asked to review sample profiles of the educational and career interests of typical students, counselors surveyed repeatedly recommended that girls enter careers with low prestige and a high level of women workers. Boys with identical backgrounds were recommended to enter male-dominated, high prestige occupations. Typically, a girl with top grades interested in a health career was advised to enter nursing while a boy with identical grades and background was encouraged to select medical school.

When asked if sex or race influences their career or training recommendations to students, counselors denied it. They ranked four other attributes--such as academic performance and career interest--higher on their list of considerations. Indeed, when given case studies of typical students, each with grades of C-plus or better, counselors recommended that 95 percent enter college regardless of sex.

But when the counselors were asked their attitude toward college training, subtle sex stereotyping stood out. Men counselors tended to see college as a way to train girls for female-dominated, semi-skilled jobs. Women counselors were more prone to emphasize college as a way for girls to enter professions and break sex barriers.

Counselors surveyed were not totally unaware of the sex stereotyping in their career recommendations and argued that they are preparing girls for the "real world." The authors take issue with this position and suggest instead that

students be informed of their legal rights for fighting discrimination rather than be limited in their career choices.

The implications for school counselors are clear: Look out for sex biases that creep into everyday communications with students. If these biases are not reversed, career counseling will only reinforce sex stereotyping in occupational choice.

PRODUCT AVAILABLE: Sex as a Factor Influencing Career Recommendations of Public School Guidance Counselors, 1974. Contact principal investigators for cost and availability.

Contract No.: NE-G-00-3-0211 Funding: $9,691.

STATE BUDGETING FOR HIGHER EDUCATION

Principal Investigator: Lyman Glenny
Center for Research and Development
in Higher Education
UNIVERSITY OF CALIFORNIA AT
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Berkeley, California 94704

Faced with declining enrollments and spiraling costs, colleges and universities across the country are compating with one another for fewer higher education dollars. Some states are meeting this challenge with clear policies for allocating funds and reviewing budgets. Others are not. When money worries take priority, questions about instructional programs take second place.

Recognizing that poor budgetary policies may jeopardize state colleges and universities, this three-year NIE/Ford Foundation study is reviewing the strengths and weaknesses of various state funding procedures. All 50 states will be surveyed. Intensive interviews in 17 states will highlight how higher education dollars are spent. The study covers pre-budget requests as well as legislative action. The mid-1976 final report will analyze how states evaluate and fund higher education budget requests and will offer guidelines for long-term budgetary reform.

PRODUCTS AVAILABLE: Study still in progress.

Contract No.: NE-G-00-3-0210 Funding: $341,620.

EDUCATION, PAY AND JOB SATISFACTION

Principal Investigator: David Stern
Childhood and Government Project
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If students want careers that pay off in high job satisfaction and a high paycheck, there's no guarantee they'll find it--even with college degrees. While workers with more training may eventually make more money, they tend to enjoy fewer side benefits.

Take managers and senior staff, for instance. Salary and wages may be greater, but personal rewards like close friends on the job, words of praise from superiors and opportunities to learn new skills seem to decline as salaries move upward. Meanwhile, even though persons lower on the career ladder fuss about their small paychecks, they often enjoy their work more.

Stern's survey of four types of job holders--accountants, office assistants, nurses' aides and supervisors--in a major city workers' union shows how hard it is to place a dollar value on these nonpaid benefits. Even so, they show up at the top of most job holders' want lists when asked to compare the kinds of rewards they value most.

Even though results are still being analyzed, the author suggests that unions can be expected to push harder for work conditions which promote personal growth and job satisfaction. And for school people, the message is clear: Begin now to help students evaluate the trade-offs they will need to make between pay and other rewards of their future work. High salaries and good feelings don't necessarily go hand in hand.

PRODUCT AVAILABLE: Education, Wages and Nonpecuniary Qualities of Work: Some Empirical Findings. Contact author for availability.

Contract No.: NE-G-00-3-0213 Funding: $89,727.

NON-COMPLETERS IN PUBLIC AND PROPRIETARY SCHOOLS

Principal Investigators: Wellford Wilms and Lyman Glenny
Center for Research and Development in Higher Education
UNIVERSITY OF CALIFORNIA AT BERKELEY
Berkeley, California 94704

This study will measure the ability of proprietary and public schools to retain students long enough to teach them a marketable skill.

In earlier studies by Wilms, differences in the labor market success of graduates from proprietary and public vocational schools were compared and correlated with institutional factors such as placement activities, faculty salaries, advertising expenses, administrative practices, physical plant and equipment. The central hypothesis was that graduates of proprietary schools will fare better in the labor market than will students graduating from public vocational schools. Since the non-completion rate for public schools is so high--the most conservative estimate is 50 percent non-completion within two years--the present study will look specifically at the skills acquired by non-completers.

Rapid expansion of community colleges represents a major educational investment in post-secondary career education. If it can be shown that proprietary (profit making) vocational schools are more successful in teaching students marketable skills and placing them in related employment, consideration might be given to increasing investments in these proprietary schools or incorporation of successful components of proprietary school education within community colleges.

PRODUCT AVAILABLE: Study in progress.

Contract No.: NIE-G-74-0076 Funding: $173,951.

STUDY OF THE RELATIVE EFFECTIVENESS OF PROPRIETARY VERSUS PUBLIC VOCATIONAL EDUCATION

Principal Investigator: Wellford Wilms
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College used to be a privilege for a chosen few. But recent years have seen the growth of public community colleges, technical schools and "for profit" trade and technical schools. Many of their students are the first in their families to sample postsecondary education.

What kind of job are these institutions doing for these "new" students and how much does it cost?

Generally, graduates of public community colleges had about the same success in the labor market as graduates of proprietary schools. Placement rates did differ with the occupational area for which students were trained, however. For example, 81 percent of the entire cosmetology sample found cosmetology jobs after graduation. Accounting graduates were not so fortunate--20 percent of proprietary graduates and 10 percent of public graduates got accounting or accounting-related jobs after completing their training.

Real costs to the 2,270 students of the sample's 21 public and 29 proprietary schools were about equal. Tuition at proprietary schools is higher, but the time required to complete the coursework is shorter and the earnings foregone to attend classes are less. Public School tuition is lower, but students attend fewer hours each week, making the completion time longer and the loss of earnings higher.

Researchers concluded that community colleges and proprietary schools are not reducing the societal inequities associated with sex, ethnicity, or lower socioeconomic status. Women earned less than men in the same jobs and minority graduates earned less than whites in five of the six sample occupations. In addition, eight out of ten graduates of professional and technical-level postsecondary vocational programs did not get the jobs they trained for. Eight out of ten graduates from lower-level vocational programs got the jobs they trained for, but with the exception of secretaries, they barely earned the federal minimum wage.

What ought to be done? "Make sure that people have at least minimal information when they make decisions," urges Wilms.

Occupational education consumers need more facts on the risks and benefits of different kinds of programs before they make decisions. Government and the schools themselves should make this happen, asserts the final chapter, through truth-in-advertising regulations, the development of standards for vocational program effectiveness, and action to assure that graduates get equal pay for equal work.

PRODUCT AVAILABLE: Public and Proprietary Vocational Training: A Study of Effectiveness, 1974. Available from the publisher, D. C. Heath & Co., 141 Spring Street, Lexington, Massachusetts 02173.

Contract No.: NE-G-00-3-0204 Funding: $159,305.

INCREASING EDUCATIONAL WORK EXPERIENCES FOR YOUTH

Principal Investigator: Harry Silberman
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Los Angeles, California 90024

Well-designed student work opportunities can offer experiences which are nearly nonexistent in our present public school system--opportunities to observe and participate in important decision making, to fulfill socially useful roles and to relate to a variety of influential, competent adults. Such work experience, says Silberman in this "think paper," can also help students:

- develop self-reliance, assertiveness, personal competence, responsibility and interpersonal skills;
- learn personal responsibility;
- prepare for meaningful and useful careers;
- understand the organization of bureaucracies and how they can be improved.

Yet, worthwhile work experiences for young persons are difficult to find. Young workers consistently are placed in the lowest-paying and least responsible positions. Employers are reluctant to trust inexperienced youth with responsible jobs and hesitate to disrupt productivity by hiring them. In too many programs, youth are placed in make-work situations and isolated from the important, real-life responsibilities, thereby minimizing the potential value of the opportunity.

Effective work experiences must be carefully designed and involve more than menial or parallel work tasks. To be both valuable and satisfying, the work needs to include:

- verbal instructions which clearly communicate not only the work requirements but the more subtle "rules of the game";
- positive, competent role models;
- meaningful work which offers risk, challenge and group support;

- realistic feedback on successes and failures;
- adaptation of experiences to individual differences, allowing students to progress to more difficult tasks as their skill level increases.

Developing these experiences may mean redesigning present jobs, humanizing work environments and carefully planning student experiences. This will be no easy task and may be most successfully accomplished by using a network of federally sponsored training experiences to foster socialization opportunities, personal maturity and realtistic career planning.

Doing so will both improve the learning environment by tying it to the activities of the larger community and benefit the student by providing opportunities to learn attitudes and skills imperative for future success.

PRODUCTS AVAILABLE: Labor Market Information for Youths, Wolfbein, Seymour (ed.) Temple University, Philadelphia, 1975. "Improving Work as a Socialization System;" (paper). Contact author for availability.

Contract No.: NIE-C-74-0051 Funding: $1,500.

THE IMPACT OF COLLEGES AND UNIVERSITIES ON THE EDUCATIONAL ASPIRATIONS OF WOMEN

Principal Investigator: Michelle Patterson
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SANTA BARBARA
Santa Barbara, California 93106

How do educational aspirations develop and change in undergraduate men and women? To date the research and sociological theories on aspirations have applied primarily to male undergraduates. Little is known about the possibly unique influence of college upon women.

The two major but opposing theories of education aspirations--namely "environmental press" and "relative deprivation" -- predict the effect different types of schools have on student motivations. The "relative depirvation" theory states that the keener the academic competition and the worse the student does, the lower the student's self-concept and aspirations. The theory of "environmental press" presents an opposing view and says that stiff competition at elite schools is a strong motivator and, despite the possibility of low grades for some, all students on those campuses gain higher future aspirations.

Which one of these theories is most valid for college women? In an initial subsample, some interesting trends appeared. Men tended to place greater emphasis on grades in evaluating their academic self-worth. Women, on the other hand, were less effected by grades and more influenced by high scholastic test scores (comparison of superior students nationally), to substantiate their abilities.

Data on 60,000 college students used to further check out the respective theories, had disappointing results. Neither "relative deprivation" nor "environmental press" provides a very satisfactory explanation for the development of undergraduate educational aspirations. Undergraduate men and women did not seem to have different reference groups--i.e., individuals against whom they compared themselves to determine their respective academic abilities. Nonetheless, the fact remains: Far fewer women receive advanced degrees than do men. Why this happens is a topic needing further careful study.

PRODUCT AVAILABLE: The Impact of Colleges and Universities on the Educational and Occupational Aspirations of Women (progress report). Available from principal investigator.

Contract No.: NE-G-00-3-0200 Funding: $10,904.

STATUS DIFFERENTIATION AND THE EDUCATIONAL COMPLEX IN AN APPALACHIAN COMMUNITY

Principal Investigator: Allen Batteau
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UNIVERSITY OF CHICAGO
Chicago, Illinois 60637

What are the effects of the rapid expansion of the educational system and other social services upon the social structure, status system and values of rural communities in an Appalachian area (Knott County, Kentucky)?

In the past 20 years, great emphasis has been placed upon the expansion of the educational system as the primary means of regional development and occupational mobility. Batteau hypothesizes that the range of social differentiation in the community, along dimensions of wealth, occupational access, and orientation toward "modern" versus "backward" values, has increased due to the growth of modern bureaucratic organization such as schools.

He suggests that the disjunction between traditional and modern sectors of the community has become more radical in the last 20 years largely due to the expansion of educational and other institutions.

If Batteau is correct, educational expansion may have increased the status disabilities or rural mountain people by increasing mobility rates for some portions of the community, decreasing the frequency and forms of interaction between high-status and low-status persons in the community, and increasing disparities in wealth, income and value orientations.

PRODUCT AVAILABLE: In progress.

Contract No.: NE-G-00-3-0066 Funding: $9,259.

THE ROLE OF EDUCATION IN SOCIOECONOMIC ACHIEVEMENT:
A COMPARATIVE STUDY

Principal Investigator: William K. Cummings
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UNIVERSITY OF CHICAGO
Chicago, Illinois 60637

Is the desire for jobs that pay big in terms of money, security and prestige common to all post-industrial democracies? The answer may lie in this analysis of trends in youth values and attitudes, the relationship between a company's size and the benefits it offers, and other topics--in the U.S. and abroad. In the process, measures for cross-cultural studies are being refined.

Final results aren't due for awhile, but interim reports are yielding some provocative findings. Internationally, it looks like employees in large companies have a better chance at higher pay, more prestige and greater on-the-job responsibility and security--while risking only minor job dissatisfaction (a finding which contradicts previous conclusions). Everywhere education plays a key role in determining occupational prestige. At home and away, large companies are more likely than small ones to select employees on the basis of educational attainments, probably because the volume of personnel paperwork makes it hard to deal with other, more individual criteria.

When all the results are in, career educationists should find the conclusions useful in helping students understand the relationships among bookwork, brainwork and earnings.

PRODUCTS AVAILABLE: Interim Reports--Homogeneity of Individual Value Orientations: A Macro-Social Investigation; Organizational Size and Socioeconomic Achievement (with Atsushi Naoi); Organizational Size and Workplace Change: A Comparative Study (with L. Robert Burns and Atsushi Naoi) 1975. Contact author for availability.

Contract No.: NE-G-00-3119 Funding: $70,851.

SOCIAL-PSYCHOLOGICAL AND CULTURAL FACTORS RELATED TO ACHIEVEMENT AND ASPIRATIONS OF URBAN COMMUNITY COLLEGE STUDENTS

Principal Investigator: Edgar Epps
Marshall Field Professor of Education
Department of Education
UNIVERSITY OF CHICAGO
Chicago, Illinois 60637

The number of community colleges and their enrollment have increased dramatically in recent years, but there has been limited research on characteristics of community college students and their relationship to achievement. Notably, much research concerning the process by which background, personality, and four-year college experiences influence adult educational and occupational attainment cannot be used to explain achievement/attainment processes among community college students.

This study will investigate the process by which social background (socio-economic status, race and ethnicity) and personality characteristics (self-esteem, locus of control, fear of failure and fear of success) have independent and interactive effects on college achievement, persistence in a specific program while in college, career choice and post-community college educational and occupational attainment.

Among the objectives of the study is the development of "profiles" of students who have various characteristics of high or low academic aspirations and who manifest persistence in programs which allow transfer of credits to formal four-year colleges or who change to a vocational preparation program (as contrasted with students who drop out of community college programs).

The study will be based on analysis of data from 2,100 entering freshmen in the City Colleges of Chicago. Beginning in fall 1974, the study will follow students through two years of a typical urban community college program and a third year during which a large proportion of this group will be expected to have made initial occupational choices and entered the work force, or transferred to a four-year college. Survey data will be collected in fall 1974; and followups will occur in late spring 1975, and annually thereafter. Occupational and educational aspirations, academic achievement and persistence in college will be related to factors such as race, ethnicity, sex, age, socio-economic status of the students' family, ability and various personality and attitude variables.

The research is directed toward identifying a cluster of personality characteristics and attitudes which will help to explain how students respond to the academic and non-academic demands of the community college environment. It will also further develop a model of the achievement process among urban community college students. Results of the study should enable practitioners to identify types of students who do not appear to be served in an effective manner by community colleges and thus may offer a basis for the development of diversified opportunities for such students, more effective curricula for community college programs and responsive student service programs within such settings.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-G-74-0092 Funding: $90,825.

ECONOMIC ANALYSIS OF THE INVESTMENT IN EDUCATION

Principal Investigator: T. W. Schultz
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Chicago, Illinois 60637

Earning power is one way of measuring the economic value of education. Yet more than wages must be taken into account. Does education help farmers, laborers, housewives and students respond to rapid changes in our economy and society? According to this author, it does. Education adds to a person's ability to perceive and solve problems, including those brought on by economic change.

Although the effects of education on decision making and personal planning are hard to pinpoint, a number of studies indicate that education makes a difference in how individuals react to change. Data on housewives, for example, show that education, while not necessarily improving household management, does affect the choice of mates and determine the number of children. In addition, the more educated women are the first to accept and use innovations such as oral contraceptives.

Historically, the more highly educated settlers--such as the Dutch in Iowa--proved to be the more competent and successful farmers. And in general, the better-educated farmer is the first to try new technical advances that eventually pay off in higher yields.

For students, this analysis shows that those with a college degree are better able to deal with change than students who stopped with a high school education. College-educated persons are better able to evaluate changes in the job market and make appropriate adjustments in their own career goals.

In short, education increases the ability of people to recognize economic change and beneficially reassess their use of time and resources. Still unknown, is how education reinforces the ability to perceive and assess economic change.

PRODUCT AVAILABLE: "The Value of the Ability to Deal with Disequilibria." Journal of Economic Literature 13; September 1975. A second paper will follow. Contact author for availability.

Contract No.: NE-G-00-3-0153 Funding: $76,260.

WORKSHOP ON EDUCATIONAL AND OCCUPATIONAL COUNSELING SYSTEMS FOR ADULTS

Principal Investigator: Michael O'Keefe
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Chicago, Illinois 60680

On April 28-29, 1976, the National Institute of Education and The Fund for the Improvement of Post-Secondary Education sponsored a workshop on education and occupational counseling systems.

The principal investigator is preparing a report on the workshop which will encompass the following matters:

1. The state of knowledge of occupational and educational counseling systems, including the prevailing theories and to what extent theory is linked to practice.

2. The state of practice of occupational and education counseling systems, including:

   a. A description of the various kinds of educational and occupational counseling systems for adults which have been and are being supported by federal agencies.

   b. The impact of these systems on counseling and guidance and on the ability of clients to act on their decisions.

   c. Emerging opportunities in the area of educational and occupational counseling systems, e.g., new forms of service delivery and new populations for attention.

3. Recommendations for additional research and development, dissemination and capacity building by federal agencies.

PRODUCT AVAILABLE: In progress.

Contract No.: 400-76-0024 Funding: $6,000.

NEW MODEL FOR YOUTH LEARNING AND SOCIALIZATION

Principal Investigator: Edward Wynne
College of Education
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Chicago, Illinois 60680

Today's youth probably are as different as they seem. The routes from adolescence to adulthood have seen dramatic changes since the turn of the century.

Statistics cited in this study say that these changes are related to the symptoms of growing youth alienation--alienation which is most intense among upper middle-class youth.

What's at the root of the problem? Wynne says schools may be failing to teach young people the interactive skills and personal attitudes which make for smooth entry into society. Middle-class youth in particular are relieved of responsibilities which teach them affective skills (working their way through school, caring for brothers and sisters, etc.). The growing influence of school has been tied to a dramatic decrease in time spent in paid or unpaid employment. There are signs, according to this study, that schooling just isn't all that effective in preparing young people for the real world that awaits them.

Is there a solution? The suggestion here is that one means of increasing affective learning and decreasing youth alienation is to expand the amount and variety of work experience available to youth. The authors propose the development of a particularly structured management internship system that views work as an environment which 1) cuts across age lines, 2) forces employees to relate to many persons, styles and age lines and 3) enables employees to produce goods to services felt to be relevant by pruchasers. By design this system would provide a variety of incentives to foster learning and commitment to learning and teaching on the part of both interns and their employer-mentors.

Ultimately, implementation of the program could be financed and operated much as state and community colleges are supported, although interns would not earn degrees. Instead, interns would acquire skills needed to hold postgraduate positions. Equally important, interns would have better understandings of how their work fits into the fabric of adult society.

The researchers note that facts about credentialism and advancement without a degree are mixed. There are career routes to college-level jobs still open to youths with high initiative and strong affective skills. But there's a growing tendency to question the talents and judgment of non-college job applicants who don't hold sheepskins but do hold high career aspirations.

The authors say that if these attitudes persist, there will be an increased correlation between possessing a college degree and higher earning--not because college will become more relevant to work, but because top-notch high school graduates will feel compelled to go to college to assure good job prospects. This "self-fulfilling prophecy" may result in more alienation than society can bear.

PRODUCT AVAILABLE: Management Internships: A New System for Youth Socialization and Learning. Contact author for availability.

Contract No.: NE-G-00-3-0219 Funding: $19,991.

CAREER DEVELOPMENT AMONG COLLEGE GRADUATES

Principal Investigator: Joe Spaeth
Survey Research Laboratory
UNIVERSITY OF ILLINOIS
414 David Kinley Hall
Urbana, Illinois 61801

The proposed research would investigate the determinants of three career outcomes among college graduates: earnings, job satisfaction, and career instability among women. The data set to be analyzed would be the NORC five-wave longitudinal survey of 1961 college graduates.

Determinants of earnings would be incorporated in structural equations models with earnings as dependent variables at three stages of the early career development of college graduates: one year, three years, and seven years after graduation. In addition to standard independent variables such as labor force experience, occupational status, and employment sector, the effects of career expectations, advanced education, and self-reported ambition would be estimated. For 1964, three years after graduation, effects of such job characteristics as size of firm, hierarchical position, and degree of control over own and others' work would be incorporated in the earnings models.

Analysis of earnings data would be carried out separately for males and females and for blacks and whites. A model common to the two races and two sexes would also be constructed, and differences between coefficients by sex and race would be tested by analysis of covariance. The research would answer the following question: Net of the effects of advanced education, occupational status, employment sector, and personal and job characteristics, what are the "costs" of being a black or female college graduate?

Job satisfaction, which was measured one and three years after graduation, would also be analyzed through structural equations methods. Independent variables would include advanced education, occupational status, earnings, the job characteristics mentioned above, and negative self-image, plus perceived challenge, co-worker contacts, and "comfort" as characteristics of the job. Separate analyses would be carried out by race and sex.

In connection with research on differences in occupational achievement among college graduates, the Principal Investigator has discovered that women had less stable occupational expectations and seemed less able to convert occupational expectations into reality than men. Further investigation has revealed that

only women in education are as likely as men to be working in jobs that they earlier reported as expecting to hold. The proposed research would investigate whether women's career instability was characteristic of each period of career development (from the freshman year in college to seven years after graduation). It would discover the extent to which women's career decisions were more unstable than men's at each stage, the extent to which career field turnover differed from chance for the two sexes, and which, if any, fields besides education were high-stability fields for women. The effects on stability of career commitment and interrupted labor force participation and advanced schooling would also be estimated.

Grant No.: NIE-G-76-0077 Funding: $84,111.

STUDY OF PRACTICAL VOCATIONAL ORIENTATION PROGRAM (P.R.Y.O.) IN SWEDEN

Principal Investigator: Robert E. Belding
College of Education
THE UNIVERSITY OF IOWA
Iowa City, Iowa 52242

A three-way partnership between Sweden's government, education and business sectors gives mid-teens a hands-on sampling of the real working world.

Called "Practical Work Introduction" (or P.R.Y.O. in Swedish), and designed to span two academic years, the program's eighth-grade participants visit and observe in a factory, a business and a service agency. Ninth-grade students spend two weeks of their last compulsory year of school working at tasks in one business each selects. Parents, teachers and a career counselor help the student decide which work site will be best.

These practical experiences generate opportunities for subject area in-school learning, too. For example, language arts classes make class projects of writing thank you notes to business and industries which hosted students' visits. Art experiences become expression of events in the out-of-school, workday world.

This realistic approach has won the support of parents and employers alike. Officials report that nearly 85 percent of all Swedish businesses cooperate voluntarily with the program, although they receive no money or tax credit for doing so. Parents are urging that more such experiences be extended to young people who stay in school beyond the compulsory years.

According to Belding, while no innovation should be adopted wholesale, individual school systems could gain from trying P.R.Y.O. or similar career exploration programs on for size.

PRODUCTS AVAILABLE: "PRYO--Sweden's Unique Career Education for ALL Secondary School Students." Western European Education 7: 37-45; Fall 1975. "A Career Education Approach Worth Examining--There's More to Swedish Schools than Avant-Garde Sex Education." The American School Board Journal 142: 37-38; July 1975. "Career Education in Sweden." The Education Digest: 48-50; October 1975. "PRYO--Another School Import from Sweden?" The Clearing House 49: 163-166, December 1975. "Real Work Experience for ALL Teenagers--the Swedish Way." Journal of Career Education 1: 32-34; Winter 1975. Contact author for availability.

Contract No.: NIE-C-74-0061 Funding: $5,150.

CONFERENCE ON FREEING SEX ROLES FOR NEW CAREERS

Principal Investigators: Nancy Schlossberg and Janice M. Birk
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College Park, Maryland 20742

Women and men are still locked into sex role stereotypes without much freedom to choose new career directions. This was the opening note of an NIE-sponsored conference of 38 students, counselors, administrators and professors who examined ways to help people break out of traditional work roles and reach their full career potential.

What targets for action did this blue-ribbon group see? Remove stereotypic illustrations from career guidance materials. Prepare young people to choose adaptive strategies rather than staying in rigidly "appropriate" behaviors. Get counselors and educators to rethink the concepts of masculinity and femininity by examining their own values. Teach courses on sex roles that show alternative role models, life styles and work styles. Organize assertiveness training for men and women as individuals or as couples. Make young women more aware of the multiple work and life options open to them. Help young people get to know themselves better--their interests, skills, talents--in short, what's important to them as individuals.

Participants felt that this conference gave them an excellent opportunity to exchange ideas and that it would help reach the goal of expanding career options for men and women as conferees implement these ideas in their own work.

PRODUCT AVAILABLE: The report of the Conference, Freeing Men and Women to Explore New Careers, will be available from the American Council on Education, I Dupont Circle, N.W., Washington, D. C. 20036, in November 1976.

Contract No.: NE-C-00-3-0060 Funding: $1,200.

DROPOUTS AND GRADUATES FIVE YEARS AFTER HIGH SCHOOL-- A RE-SURVEY OF A NATIONAL SAMPLE OF YOUNG MEN

Principal Investigator: Jerald G. Bachman
Survey Research Center
UNIVERSITY OF MICHIGAN
Ann Arbor, Michigan 48108

What are the longer-range effects of dropping out of high school? To find out, a re-survey of the young men who participated in the Youth in Transition project was conducted. Patterns of change and stability linked to different family, high school and post-high school environments were examined in the hope of providing information relevant to public policy decisions.

Bachman's analysis of the data led him to state, "Dropping out of high school is overrated as a problem in its own right--it is far more appropriately viewed as the end result or symptom of other problems which have their origin much earlier in life. The difficulties experienced by the dropouts we studied--the low aspirations and accomplishments, and even the limitations in self-esteem and self-concept--were already present or predictable by the start of the tenth grade, and there is little evidence that dropping out made matters worse."

The conclusion drawn after studying more than 20 personality and behavior dimensions for a four-year period? There's not much evidence to support the argument that dropping out damages a young man's "mental health" and his commitment to society's values.

Dropping out does make it more difficult to get a job; however, the more important causes of unemployment are those "pervasive differences in background and ability which precede and help determine the act of dropping out." In fact, it may actually be misleading to claim that dropping out will double a man's chances of being unemployed.

What about differences in earning between stay-ins and dropouts? "When we compared employed dropouts with employed high school graduates, we found their weekly income levels to be nearly identical."

How about job satisfaction? Of those who were employed, three-fourths of the dropouts were "quite satisfied" or "very satisfied" with their jobs, compared with two-thirds of the graduates who were expressing similar levels of satisfaction.

Does being in a vocational education program increase or decrease the likelihood that a young man will drop out of school? After looking at the data, Bachman says, ". . .if anything, vocational programs may have a slight tendency to reduce dropping out."

What does it mean for educators? Bachman urges that educational alternatives be expanded, allowing people to exercise their educational options whenever they're needed (at the time of the re-survey, a number of dropouts had earned diplomas or were planning to do so). In short, the problems which lead to dropping out require intervention during the grade school years or before so that young people have time to correct those problems and avoid the additional ones created by the act of dropping out of high school.

PRODUCT AVAILABLE: Progress report titled Dropouts and Graduates Five Years After High School: A Re-Survey of a Sample of Young Men. Contact author for availability.

Contract No.: NE-G-00-0198 Funding: $158,667.

EDUCATION, EXPECTANCIES AND EMPLOYMENT OF WOMEN AND MINORITIES

Principal Investigators: Patricia Gurin and Betty Morrison
Institute for Social Research
UNIVERSITY OF MICHIGAN
Ann Arbor, Michigan 48106

If women and minorities aren't setting high work and educational goals for themselves, it's probably because they see a real world not reflected in the average economist's labor market charts. That's the tentative conclusion of this ongoing study of job expectations that women and minorities have.

A 1972 national sample data collected by the Survey Research Center show that black men and women and white women hold lower expectations for themselves because they've learned through personal experience that more schooling is no guarantee of overcoming other roadblocks to new or better jobs. Because they believe their options are limited by factors beyond their control, they in turn actually don't get many high-salaried jobs or graduate degrees. This, Gurin suggests, may simply perpetuate subtle discrimination. It is certainly very different from the traditional economists' view that women and minorities do poorly in the labor market because of lack of skills, cultural background or personal shortcomings.

The twofold challenge to school people is to encourage young women and minority students to set their sights on higher goals and to help them develop the "can do" attitudes that will free them to reach those goals.

PRODUCTS AVAILABLE: Education, Expectancies and Employment of Women and Minorities--1975 Year End Report; Counseling Implications of Black Women's Market Position: Aspirations and Expectancies (with Anne Pruitt) 1975; The Role of Worker Expectancies in the Study of Employment Discrimination, January 1974. Contact principal investigators for availability.

Contract No.: NIE-G-74-0068 Funding: $70,975.

A POLICY STUDY IN EDUCATION AND WORK: JOB SATISFACTION

Principal Investigator: Robert P. Quinn
Survey Research Center
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Ann Arbor, Michigan 48106

The old axiom that getting more education means getting more satisfying jobs may not be as true as most people think. University of Michigan researchers who analyzed 16 studies and nine national surveys concluded that education has little direct effect on job satisfaction, but education helps workers get "generally better"--hence more satisfying--jobs, an indirect effect.

Other thought-provoking points are:

- The most dissatisfied of all were those workers too highly educated for their jobs.
- "There is clearly no increment in job satisfaction with each succeeding year of education."
- People with more years of education look for more challenge and self-development opportunities in their jobs.
- All surveys except one indicated there was no payoff from high school or college training unless a diploma is earned--the "credentials effect."

What should be done?

- Employers and educators alike should pay more attention to the occupational needs of "over educated" and "undereducated" persons. It's sad but true that while many people lack the skills they need for available jobs, others have know-how they'll never use. Employers should reexamine the educational requirements they set for jobs. Job entry should be based on skills acquired rather than diplomas secured. Jobs should be redesigned to take account of the increasing education level of America's labor force and accommodate the importance better-educated workers attach to jobs that challenge them and improve their skills.
- K-12 educators should put less emphasis on career-specific skills and more on generalizable

skills useful from job to job. Educators should stretch the unwritten contract between the student and the educational system to make it open-ended and good for a lifetime of training and retraining when the individual needs it.

- Educators should stop saying schoolwork is essential for enjoying a good job later on. "In terms of job satisfaction, the occupational payoffs of education are quite small," says this study. "To promise otherwise will lead to a disillusioned labor force."

PRODUCT AVAILABLE: NIE Papers in Education and Work Number 5: Educational Job Satisfaction: A Questionable Payoff. Contact NIE for availability.

Contract No.: NIE-C-74-0136 Funding: $35,462.

EFFECTIVENESS OF MODEL OFFICE, COOPERATIVE EDUCATION AND OFFICE PROCEDURES COURSES BASED ON EMPLOYEE AND EMPLOYER SATISFACTION EIGHTEEN MONTHS AFTER GRADUATION FROM HIGH SCHOOL

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After you've learned typing, shorthand, filing and bookkeeping in high school or a community college, what's the best way to learn the work habits and attitudes essential to successful employment?

Business office education programs typically use one or more of the following training approaches after students finish the basics: (1) a sequence of office procedures courses, (2) work in a model office in the school where students simulate tasks of a hypothetical company and (3) cooperative office education where students gain on-the-job experiences to extend classroom work.

In theory, the closer one gets actually to performing the work required, the more rapid, durable and relevant the learning. Others have argued that a good simulation is as effective as a good cooperative education experience. And some hold that a good office procedures program is as effective as simulation.

In a survey of the on-the-job performance of about 550 graduates enrolled in the three types of programs (and their 200 employers), one finding stood out: Graduates of each approach can handle typing, shorthand, filing and bookkeeping tasks, but most fell down sharply on personal adjustment skills (attitudes, interpersonal relations). While programs using one or more of the three training approaches say they integrate job skills, office knowledge and work habits, performance on the job 18 months later indicates that all three approaches are falling short of what's needed in personal adjustment.

Two other findings are noteworthy:

- Graduates of all three programs have about the same labor market experience in terms of salary, wages, number of people supervised and employment rates.

- But, the type of course taken did make a difference in future plans--in whether the student planned to

stay in office work (cooperative office education graduates), planned to pursue additional office education training (true of model office graduates) or used training as a stepping stone to other objectives (true of office procedures graduates).

One implication: In terms of teaching basic job skills, all of the three approaches are doing equally well, b t there's still a need to help students learn how to behave on the job and get along with co-workers.

PRODUCT AVAILABLE: Effectiveness of Model Office, Cooperative Education and Office Procedures Courses Based on Employee and Employer Satisfaction Eighteen Months After Graduation From High School. Contact author for availability.

Contract No.: NIE-G-74-0089 Funding: $13,288.

IMPACTS OF COLLEGIATE EXPERIENCE AND PARENTAL SOCIALIZATION ON CHANGES DURING COLLEGE IN UNDERGRADUATES' CAREER ORIENTATIONS AND PREFERENCES

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The purpose of this study is to assess the impacts of selected aspects of the collegiate experience on changes in undergraduates' occupational preferences and personal goals. The study focuses on two general aspects of the student's participation in a four-year college or university environment; the social structure, particularly its normative aspect, as defined by the orientations of faculty and students toward the purposes of a college education; and the individual student's perceptions of the institution's capacity for facilitating the attainment of personal goals.

A major departure from much of the extant research on college impact is that close attention is paid to the influences of parental socialization present throughout the student's college days. While much has been made of occupational inheritance among adults (that is, the tendency of children to overchoose occupations held by parents), additional aspects of the parental socialization process are considered, notably life style and the modes of parent-child relationships that contribute to adult development. An important aim of this research is to determine the extent to which college influences on students' occupational orientations and preferences are mediated by parental socialization and parent-child relationships maintained, in many instances, through continued contacts with parents during the student's college years.

PRODUCT AVAILABLE: In process.

Grant No.: NIE-G-76-0081 Funding: $75,595.

THE ABANDONMENT RATES AND CAUSES OF ABANDONMENT OF INNOVATIONS IN SECONDARY SCHOOLS

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Which recent innovations are more durable? This examination of the success rates of 33 current educational practices in 3,200-plus Midwestern schools suggests some answers for innovation-weary educators.

The winner for durability was simulation and gaming activities, which were adopted by over 2,100 of the responding schools and abandoned by only 18.

Career education also scores high on adoption and low on abandonment. About 52 percent of the schools surveyed had implemented career education practices. Of these, less than one percent had abandoned the practices. Schools which dropped career education cited staff personnel problems such as lack of leadership and inadequate teacher training as the main reasons.

What is it that determines which innovations make it and which ones fail? Those that are complex, expensive and difficult to administer fail. If principals or superintendents don't have to spend a lot of time and energy, chances of success are better. A real indicator of whether an innovative practice will hold is the degree to which it can be developed and implemented by individual teachers without affecting other ongoing programs of the school or existing organizational framework. Well-packaged, easy-to-use materials are a big help. There is a critical period in the existence of an innovation, too. If the practice is in use beyond three years, the chances of it being retained are measurably improved.

Other observations are that some school districts will wait to see if neighboring districts experience success before trying an idea. Preferences in new methods are those which help all students. Many administrators don't know how to introduce or support change and could benefit from leadership training. Fortunately, patrons usually favor most innovations.

DeArman issues a caution to school decision makers: "New practices require adequate personnel and financing to implement and these conditions should be carefully considered

when attempting adoption." With fewer dollars available for new programs these days, DeArman's findings will ring true to those who read the full report.

PRODUCTS AVAILABLE: Investigation of the Abandonment Rate and Causes of Abandonment of Innovative Practices in Secondary Schools. Contact author for availability.

Contract No.: NIE-G-74-0005 Funding: $9,893.

EVALUATING THE RETURNS TO THE EDUCATION OF WOMEN

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Is the thought of future higher incomes driving many millions of young women to the nation's college campuses? The answer is a clearcut no, making a closer look at female education and earning power necessary.

Statistics indicate that for women, a year of education increased the hourly wage rate by seven percent. This compares to a 3.1 percent increase for men per year of education attained. A college degree increases women's wages by twice as much as men's, for both blacks and whites. This result, which indicates a statistically higher average return for women and no lower returns by race, is in striking contrast to earlier estimates of the return to education. A high school diploma increases the wages of white women relative to white men, and black men relative to black women. It follows, then, that since white women have the highest return on high school, they also have the largest proportionate attendance and are less likely to drop out than other race/sex groupings. Indications are that black women experience the greatest increase in wages from a college degree, but they are less likely than white men and women to receive the degree.

If the returns on education look so good, why aren't women's earnings statistics rosier? Information presented here shows that the personal characteristic most likely to screen one out of a wage-optimal occupation is being a woman, while the characteristic most likely to get one into a wage-optimal occupation is being a man. In terms of specific occupations, women are more likely than men to be screened from the professions regardless of education or race, and they are more likely to be overrepresented in clerical and service occupations. There is no evidence that there are differences in general ability favoring men over women which would substantiate a claim that there is a shorter supply of college-ability women than of men.

So why aren't more women in college? One explanation is that there are differential opportunities to attend college--or a form of nonmarket discrimination--operating against women. The opportunities may be fewer for women because colleges discriminate, because funding sources (parents, scholarships, etc.) discriminate, because high school counselors discriminate,

or because other socialization processes make women less likely to see themselves as college material.

What can schools do? Help women enter and succeed in college programs, providing moral support and financial aid when needed. Chances are their attendance will improve and they'll complete the entire program, if these survey findings hold up. High school counselors should avoid steering girls into "women's work" jobs when better-paying fields are just as viable. With parent, teacher and peer support, girls can visualize themselves as competent college graduates, earning as much or more than men if they strive to overcome the hurdles before them.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-G-74-0094 Funding: $25,843.

TELEVISION CAREER AWARENESS PROJECT

Principal Investigator: Norton Wright
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This project will develop a children's television series and supporting instructional materials and programs, aimed at children in grades 4-6, their parents and teachers.

The series is intended to reduce the limiting effect that sex roles may have on the development of interests and preferences. Many experts believe that adult's career choices are often restricted because of stereotyped roles, especially those based on sex, taught them while young. For example, a 10-year old girl of Hispanic origin may wish to join her brother in building model airplanes but does not do so because it seems an inappropriate activity for girls. However, if such an interest were encouraged, it might influence her eventually to consider careers in such diverse fields as mechanical engineering or aeronautical design.

The series and instructional materials and programs are being developed by the Southern California Consortium, an organization formed especially for that purpose. Its six members are: public television station KCET of Los Angeles, the Los Angeles City Schools, the University of Southern California, East Los Angeles College, the Office of the Los Angeles County Superintendent of Schools and the Chicago-based Science Research Associates.

The Southern California Consortium will develop, evaluate and distribute the series and the supporting materials advised by a panel of 17 education, business, labor and television experts, representing different geographic areas, ethnic groups and both sexes. The University of Michigan's Institute for Social Research will evaluate the impact of the series.

Three pilot programs are expected to be aired by fall 1977; and the full series will be offered for regularly-scheduled programming in 1978.

The series will consist of 26 half-hour programs and will be supplemented by training programs for school staff, printed materials for students, parents and teachers, and activities involving community members. Although the series will first

be made available to all public television stations, it will eventually be available in other formats for in-school use.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-400-76-0096 Funding: $3,200,000.

EFFECTS OF EDUCATION ON THE OCCUPATIONAL ACHIEVEMENT OF VARIOUS ETHNIC GROUPS

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Americans believe education is the great equalizer--the way men and women of different ethnic groups can make the American Dream come true. Is it working? Using 1970 population census data, the effect of education on job holding and income for various social sub-groups is now being analyzed.

With 200 pieces of information in hand on over two million persons, results should hold great significance for national planning and policy. But it also makes for painstaking progress. Early indications are that education has a very powerful positive effect on a person's career once other factors are held constant. But variations do exist among racial groups. Being married, single, a parent or non-parent also makes a difference in job access and earning power. Considerably more work will be necessary to explain these differences, however.

For women the effect of part-time work appears to be very significant, but the specifics of this are still unclear. Further, if discrimination is important in explaining occupational choices and earnings in the labor market-at-large, researchers are speculating at this point that its effects will be weaker in government-related work where access and earnings are more controlled. If this is true, women who are Federal civil service employees, for instance, should earn more than women employed in the private sector.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE-G-74-0090 Funding: $43,220.

AN EMPIRICAL ESTIMATION OF THE IMPACT OF ALTERNATIVE POST-SECONDARY EDUCATIONAL POLICIES

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Major increases in college enrollment occurred in the 1950's and 1960's. The reasons for this growth include liberalized admissions policies, new and more accessible two- and four-year colleges and the Viet Nam war.

The primary public policy determinant of college attendance rates is the level of tuition at public colleges. For married men and women over 25 lowering tuition at local two-year colleges from $400 to zero doubled 1970 college attendance rates. Another study found that lowering tuition by $200 in 1961 raised the aggregate college attendance rates of recent high school graduates by more than 14 percent. Young people of middling ability and from low-income backgrounds were found to have the largest response to the level of tuition. This means a higher education subsidy scheme is most efficient if it focuses its aid on these groups.

Admission policy of local colleges--especially the local two-year college--was found to have major impact on attendance rates. If local public colleges are "open door," the attendance rate of adults is sometimes a third higher. The college entrance rate for recent high school graduates is about 10 percent higher. Even if it is not open door, the mere existence of a local public college has substantial impact on college attendance. Enrollment rates of married men and women over 25 double if the SMSA has a public two-year college.

A number of striking determinants of adult attendance were uncovered. Presumably because of the GI Bill, Viet Nam veterans was three times more likely to be attending college. Women who have worked for pay at some time in the past ten years were much more likely to be attending college. This suggests that women see college as a way to career advancement.

PRODUCT AVAILABLE: Can Adults be Hooked on College? Some Determinants of Adult College Attendance (Paper 319-74); Income, Ability and the Demand for Higher Education (paper 324-75). Available from the author.

Contract No.: NIE-G-74-0100 Funding: $66,296.

EVALUATION AND ANALYSIS OF THE SATELLITE PROGRAM IN SCHOOL DISTRICT 21, NEW YORK CITY

Principal Investigator: BERNARD UPSHUR
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This study evaluated the effectiveness of four junior high school classes in a Satellite Program directed toward students who were disruptive and aggressive in the regular classroom, defiant of authority, and unable to relate to peers and who exhibited severe personality difficulties that led to learning disabilities.

Participation in the Satellite Program lasted five months during which elements in the treatment were group and individual counseling, vocational counseling, remedial instruction in basic skills and heavy emphasis on the use of multi-media materials. The outcome measures in this study were reading, mathematics and self-concept. Data were also collected on school attendance and guidance counselor ratings. The study included a six-month followup to assess the durability of program effects.

The methodology involved pre- and post-treatment tests on a sample of 45 randomly-selected Satellite Program students and a control group. The measurement instruments were the Metropolitan Achievement Tests in mathematics and reading and the Piers-Harris Children's Self-Concept Scale.

PRODUCT AVAILABLE: Evaluation and Analysis of the Satellite Program in School District 21, New York City, by Bernard Upshur. Available from ERIC.

Contract No.: NE-G-00-3-0207 Funding: $6,450.

AN ANALYSIS OF GUIDANCE, COUNSELING AND PLACEMENT IN CAREER EDUCATION

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Are current career guidance programs effective? This survey (part of a small study done for internal planning purposes) of student and adult attitudes points out some gaps in current programs and strong sentiments for change.

Students indicated a definite need for additional assistance with career decisions and unanimously concurred that knowledge about interests, abilities, needs and values should be first priority in any career guidance effort. They also reported that although they were receiving some assistance in this area, they wanted (1) more relevant and accurate information on specific educational and vocational opportunities, (2) additional real-life job experiences and (3) preparation for finding the first job.

In suggesting expenditures to improve career guidance, students assigned highest priority to increasing one-to-one assistance from counselors, better teacher/counselor preparation for career guidance, more and better information sources and additional programs with direct worker contact.

Teachers, counselors, education leaders and employers provide other views on career guidance needs. All believed there was a critical need for career assistance for youth and adults. They thought present career guidance materials in career awareness, decision making and 12 other areas were inadequate, with the exceptions of occupational information and occupational classification systems.

Recommendations for improving the quality of career guidance were extensive and included improved inservice training, major changes in teacher and counselor training programs, and development of practical materials and techniques.

The majority of professionals showed little interest in research projects and model development. Instead, they stressed integrating materials in a meaningful way, training professionals to use them, and taking programs off the drawing board and putting them into action.

PRODUCT AVAILABLE: Career Guidance Needs of the Nation's Youth and Adults. Contact NIE for further information.

Contract No.: NIE-C-74-0121 Funding: $10,000.

ASSISTANCE IN THE REVIEW OF EBCE PROJECTS' SITE ANALYSIS PROCEDURES

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Using a factory or an air quality laboratory as a classroom was just a concept in 1971. Today employer site analysis procedures have been developed that allow educators to identify community sites that can provide valuable learning, develop profiles of these work sites as "classrooms" and design learning activities that can happen there.

A study of these methods, developed by Experience-Based Career Education (EBCE) programs in four widely differing communities, reveals they are extremely useful--but costly--techniques. However, by gleaning the best ideas from the four projects and combining the information they have gathered, costs for new EBCE projects implementing the strategy could be greatly reduced.

The suggestions:

- Develop a single, general manual outlining the steps of site analysis and the types of information to gather at each step.
- Develop a single, short checklist to speed up the site analysis process.
- Let students and employers take over some of the work of designing student projects at employer sites.
- Develop a single information bank to capitalize on the site analysis findings of the four EBCE projects.

EBCE students use employer sites to learn a number of skills--job skills, certainly, but the "three R's" and important life skills as well. The site analysis procedure builds a bridge between students' goals for increased academic, personal and career growth and the curriculum content which is available in the community for the asking.

PRODUCT AVAILABLE: Community Resources for Experience-Based Career Education Program: An Analysis. Contact author for availability.

Contract No.: NIE-C-74-0104 Funding: $10,500.

PERCEPTIONS, EXPECTATIONS AND CAREER FORMATION

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The central objectives of this study are to identify (1) the mechanisms by which perceptions of career opportunities and expectations regarding career outcomes are molded and constrained at various stages of the individual's career history; (2) the processes by which these perceptions and expectations are modified, (a) by individuals over the course of their careers and (b) by successive cohorts of individuals, in response to changes in the objective social and economic environment, e.g., in the labor market; and (3) the consequences for various subpopulations of discrepancies between perceptions and expectations, on the one hand, and actual events, on the other.

To achieve these objectives, longitudinal data on a cohort first observed in high school and followed over a period of five years after high school will be utilized, with one followup survey conducted as part of this study. These career histories, including subjective perceptions and expectations at various stages, will be analyzed in the context of an extensive set of state and change variables describing the social and economic conditions prevailing in local areas.

The study will be particularly concerned with factors underlying the changing career decisions, expected long-term labor market associations, and fertility expectations of women, although this will not constitute an exclusive focus. Also of particular interest is the assessment of the likely consequences of and responses to major prospective changes in the relative labor market conditions facing highly educated workers.

PRODUCT AVAILABLE: In progress.

Grant No.: NIE-G-76-0076 Funding: $228,888.

THE IMPACT OF EDUCATIONAL ATTAINMENT ON FERTILITY AND FEMALE LABOR FORCE BEHAVIOR

Principal Investigator: T. Paul Schultz
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What government policies would change married women's participation in the labor market? To date, there's no clear answer.

Most studies of the relationship between education and earning have concentrated on men, shedding no light on the economic impact of parenthood, for instance, for a mother with a master's degree in history.

A main part of this task was development of a model to predict the potential wage offers to women not now in the labor market. Researchers looked at three basic questions: What are the costs and benefits of education in economic terms? If not-in-the-labor-force women entered the labor market, would they receive benefits similar to those presently working? What is the economic cost to women of bearing children?

The availability of married women in the labor market is lower during their child-rearing years, so these years probably reduce the lifetime earnings of women. But the fact that there's little satisfactory data on wage rates by sex and age seriously limits an examination of married women's lifetime earnings. However, the major empirical finding here implies that the introduction of tax subsidy schemes--a negative income tax, for example--might only slightly alter the numbers of married women working in full-time jobs outside the home, and thus be of little value in equalizing participation in the labor force between the sexes.

One thing is certain, however. Since we do tinker with the tax system, we need to know how the changes we make will affect both women's and men's labor market behaviors. And that, says Schultz, requires much more study.

PRODUCT AVAILABLE: In progress.

Contract No.: NE-G-00-3-0212 Funding: $92,021.

CASE STUDIES OF THE PLANNING PROCESS FOR THE IMPLEMENTATION OF CAREER EDUCATION PRODUCTS AND ACTIVITIES

Principal Investigators: (See below.)

The National Institute of Education is supporting the development of curriculum units in career education for grades K through 12; these materials have been awaited with much interest from the field. Little is known, however, about the adoption, adaptation and abandonment of educational innovations such as career education and the use of specific materials. It has been suggested, for example, that the curricula should be left "half-finished" for local completion.

To help clear up these problems, NIE contracted for six case studies of the implementation of career education in the local education agencies which developed the Comprehensive Career Education Module units. The case studies chronicle activities central to the planning process in the local agencies, taking particular note of key decision points, individual groups and other factors that influence decision making and studying how such influence was brought to bear. The decision-making process, including establishing career education objectives, assessing educational needs, practices and available resources, is studied. In addition, the case studies discuss the range of career alternatives considered, the means by which program components, target groups and implementation strategies are selected and the manner in which planning intersects decision-making authority in the district.

The six case studies, with their contract numbers and funding, are:

A Case Study of the Planning Process. . .in the Hackensack Public Schools, by Karen Fox (1974). Contract no.: NIE-C-74-0055. $5,353.

A Case Study of Planning. . .in the Atlanta Public Schools, by Kathryn A. Blake, University of Georgia, College of Education (1974). Contract No.: NIE-C-74-0053. $6,095.

A Case Study of Planning. . .in the Jefferson County Public Schools, by William Goodwin, Laboratory of Educational Research, University of Colorado (1974). Contract No.: NIE-C-74-0050. $5,785.

Planning for the Implementation of Career Education in the Mesa Public Schools, by Norman Higgins, Arizona State University (1975). $6,822.

Planning for Career Education in the Los Angeles Unified School District, by Harry F. Silberman and Sally Hanelin, Department of Education, University of California at Los Angeles. Contract No.: NIE-C-74-0051. $6,980.

Planning for Career Education. . .in Pontiac, Michigan, by Case Heilman, College of Education, Michigan State University (1974). Contract No.: NIE-C-74-0054. $5,220.

PRODUCTS AVAILABLE: The above reports are available through the ERIC system.

MULTI-RACIAL LEADERSHIP PROGRAM (PROJECT "M")

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Project M seeks to increase the quantity and quality of minority students who enter the fields of mathematics, science, engineering, medicine and other professions. The numbers of minority persons--blacks, Hispanic and Native Americans--in these professions are extremely low: for instance, there are about 207,500 holders of scientific and engineering doctorates in the United States but only 0.8% are black, 0.6% Hispanic American and 0.4% Native American.

The National Institute of Education under this contract has provided funds for the initial planning of Project M which aims (1) to identify that 1 to 10% of exceptionally-gifted but economically-disadvantaged students of both minority and non-minority background (2) to expose this population (members of which may not know their career choice for years) to an intensive counseling program, labelled an "educational life support program," and to a special curriculum embracing both traditional and alternative instruction which would sustain the student from elementary through graduate school. The key elements in this program design are thus: identification of the target population, counseling, apprenticeship and tutorial programs, followup and tests.

The short-term goal is to design a program that can work on a small, manageable scale and then be expanded exponentially perhaps on the order of: planning to pilot programs ($300,000) to nationwide but manageable program ($30 million) for 10 years ($300 million).

Currently a team of experts are developing the proposal for an intensive six-week planning seminar in summer 1977. This planning session will prepare documents for Federal legislation and enough further proposals to begin a first-year pilot program.

PRODUCT AVAILABLE: In progress.

Contract No.: NIE 76-0043. Funding: $20,448.